#### Section 1 Chemical Product and Company Information

### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com Page E1 of E2

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

Product CALCIUM HYDROXIDE	
Synonyms Hydrated Lime / Slaked Lime / Caustic Lime / Calciu	im Hydrate
Section 2 Hazards Identification	
Signal word: DANGER Pictograms: GHS05 Target organs: Eyes, Skin, Respiratory system GHS Classification: Skin corrosion (Category 1B) Eye damage (Category 1) GHS Label information: Hazard statement: H314: Causes severe skin burns and eye damage.	<ul> <li>Precautionary statement:</li> <li>P260: Do not breathe dust.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</li> <li>P363: Wash contaminated clothing before reuse.</li> <li>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</li> <li>P310: Immediately call a POISON CENTER or doctor.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P405: Store locked up.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on Ingredients						
Chemical Name		CAS #	%	EINECS			
Calcium hydroxide		1305-62-0	>98%	215-137-3			
						_	
Section 4	First Aid Measures						

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE BURNS AND EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure Controls / Personal Protection						
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Limits.	Calcium hydroxide	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> Respirable fraction	TWA: 5 mg/m <sup>3</sup>			

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.						
Section 9 Physical & Chemical Pro	perties					
Appearance: Solid. White to yellow powder. Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: as CaO 2850°C (5162°F) Boiling point: as CaO 579°C (1076°F) Flash point: Not flammable	Evaporation rate ( = 1): D Flammability (solid/gas): I Explosion limits: Lower / I Vapor pressure (mm Hg): Vapor density (Air = 1): Da Relative density (Specific g Solubility(ies): 0.185% @	ata not available. <b>Ipper:</b> Data not available Data not available ta not available <b>ravity):</b> 2.24	Auto-ignitio Decomposi Viscosity: Molecular f	befficient: Data no on temperature: I ition temperature: Data not available. formula: Ca(OH) <sub>2</sub> weight: 74.10	Data not available Data not available.	
Section 10 Stability & Reactivity						
Chemical stability: Stable Conditions to avoid: Absorbs CO <sub>2</sub> from air to form		zation: Will not occur.				
Incompatible materials: Acids, fluorine.						
Hazardous decomposition products: None know	n.					
Section 11 Toxicological Information						
Acute toxicity:       Oral-rat LD50: 7340 mg/kg         Skin corrosion/irritation:       Skin-rabbit - Irritant.         Serious eye damage/irritation:       Eyes-rabbit - Severe irritant         Respiratory or skin sensitization:       Data not available         Germ cell mutagenicity:       Data not available         Carcinogenity:       Data not available         NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.         IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.         OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Reproductive toxicity:       Data not available         STOT-single exposure:       Data not available         STOT-repeated exposure:       Data not available         Potential health effects:       Inhalation: Inhalation may cause sore throat, burning sensation.         Ingestion:       Ingestion may cause burning sensation, abdominal cramps, vomiting.         Skin:       Contact with skin causes redness, roughness, pain, dry skin, burns, blisters.         Eyes:       Contact with skin causes redness, nughness, pain, dry skin, burns, blisters.         Eyes:       Contact with eyes causes redness, pain, severe deep burns.						
Section 12 Ecological Information						
Section 12       Ecological Information         Toxicity to fish: Gambusia affinis (fish, fresh water), LC50 = 220 mg/L/48 hours         Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal Considerations						
These disposal guidelines are intended for the regulations may be different. Dispose of in acc	ordance with all local, state					
Section 14 Transport Information (U	S DOT / CANADA TDG)					
Hazard class:Not applicablePaceExceptions:Not applicable2012	ping name: Not Regulate king group: Not applicable REG Guide # Not applicable	e Reportable Qu	antity: No	Mari	ne pollutant: No	
Section 15 Regulatory Information						
A chemical is considered to be listed if the CAS number for			<b>DC</b>	NDC:		
Component	TSCA CERLCA		DSL	NDSL	WHMIS Classification	
Calcium hydroxide	Listed Not lis	ted D002	Listed	Not listed	Ē	
Section 16 Additional Information						
The information contained herein is furnished without warra dent determinations of suitability and completeness of infor						

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

### **GENERAL STORAGE CODE GREEN**

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#### Section 1 Chemical Product and Company Information

**Hazards Identification** 

#### HOME SCIENCE TOOLS

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Section 2

#### Product CALCIUM CHLORIDE, DIHYDRATE

### Synonyms Calcium Chloride, Hydrated

Signal word: WARNING Pictograms: GHS07 Target organs: None known



GHS Classification: Eye irritation (Category 2A)

GHS Label information: Hazard statement: H319: Causes serious eye irritation.

#### Precautionary statement:

P264: Wash hands thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients								
Chemical Name	CAS #	%	EINECS					
Calcium chloride, dihydrate	10035-04-8	100%	233-140-8 (anhydrous)					
Contains:								
Calcium chloride, anhydrous	10043-52-4	77-80%	233-140-8					
Water	7732-18-5	15-20%	231-791-2					
Potassium chloride	7447-40-7	2-3%	231-211-8					
Sodium chloride	7647-14-5	1-2%	231-598-3					

#### Section 4 First Aid Measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Heat is generated when product mixes with water.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

### CHEMTREC 24 Hour Emergency

Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Hygroscopic material. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure Controls / Personal Protection						
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Linius.	Particulates not otherwise classified	None established	TWA: 15 mg/m <sup>3</sup> total dust	None established			

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Prop	perties	
<ul> <li>Appearance: Solid. White flakes.</li> <li>Odor: No odor.</li> <li>Odor threshold: Data not available.</li> <li>pH: Data not available.</li> <li>Melting / Freezing point: 772°C (1422°F)</li> <li>Boiling point: Data not available</li> <li>Flash point: Not applicable</li> </ul>	Evaporation rate ( = 1): Not applicable Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Not applicable Vapor pressure (mm Hg): Negligible Vapor density (Air = 1): Data not available Relative density (Specific gravity): Data not available Solubility(ies): Soluble in water.	Partition coefficient: Not applicable Auto-ignition temperature: Not applicable Decomposition temperature: Data not available. Viscosity: Data not available. Molecular formula: CaCl <sub>2</sub> •2H <sub>2</sub> O Molecular weight: 147.02
Section 10 Stability & Reactivity		

Chemical stability: Stable

ERG: Emergency Response Guidebook.

Hazardous polymerization: Will not occur.

Conditions to avoid: Hygroscopic material. Avoid moisture.

Incompatible materials: Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with sulfuric acid. Corrosive when wet. Flammable hydrogen may be generated from contact with metals such as zinc and sodium.

Hazardous decomposition products: None known.

Section 11 **Toxicological Information** 

	•							
Acute toxicity: Or	al-rat LD50: 2100 mg/kg	; Dermal-ra	abbit LD50: >	5000 mg/kg				
	tation: Data not availat							
	Serious eye damage/irritation: Data not available							
	Respiratory or skin sensitization: Data not available							
-	Germ cell mutagenicity: Data not available Carcinogenity: Data not available							
• •	ata not available it of this product present	at lovala ara	ator than or a	aual to 0 1% in identi	fied on a known or a	nticipated care	inogon by NTD	
	nt of this product present	0		1			0 ,	ogen by IARC
	ent of this product prese							
	city: Data not available	0			0	·	0,	
STOT-single expos	sure: Data not available	;						
	posure: Data not availa	ble						
	Data not available							
Potential health ef	tects: ay cause irritation to the		tony tract (no	and threat)				
	city if swallowed. Howe		, (	,	l irritation or ulceration	on		
0	skin may cause irritation	, 0	,	0		011.		
	eyes may cause severe		0 1	0				
	ms of exposure: See I							
Additional information	ation: RTECS #: EV98	10000						
Section 12	Ecological Informa	ation						
	•							
	epomis macrochirus (blu a and other aquatic inv	0,		0	750 2 005 mg/l			
Toxicity to algae: N		ertebrates:	Daprinia magi	ia (water nea), LC50.	759-3,005 mg/L			
, ,	egradability: No data a	vailable	Bioaccumu	Ilative potential: No	data available			
Mobility in soil: No	• •	, and bro		PvB assessment: N				
	cts: An environmental I	nazard canno				or disposal.		
Section 13	Disposal Conside	rations						
								tainer. State and/or local
Section 14	e different. Dispose o Transport Informa		ance with all	local, state and fed	ieral regulations o	r contract with	a licensed chem	ical disposal agency.
	•							
UN/NA number:			•	lot Regulated				
Hazard class: N				ot applicable	Reportable Qu	iantity: No	Mari	ne pollutant: No
Exceptions: No			G Guide #	Not applicable				
Section 15	Regulatory Inform			ie en the Inventory list				
Compon	ed to be listed if the CAS nu		TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
•	ient .					Listed	Not listed	D2B
Calcium chloride			Listed	Not listed	Not listed	LISTED	INUL IISTED	D7R
Section 16	Additional Inform	ation						
			fany kind Em	plovers should use this i	nformation only as a s	upplement to othe	er information dathered	d by them and must make indepen-
								NTP: National Toxicology Program,

IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, Revision Date: August 22, 2014

#### Section 1 Chemical Product and Company Information

#### HOME SCIENCE TOOLS

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#### CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

CALCIUM CARBONATE Product Synonyms Marble Chips / Boiling Chips / Marble Rocks / Limestone Section 2 **Hazards Identification** This substance or mixture has not been classified as hazardous according Precautionary statement: to the Globally Harmonized System (GHS) of Classification and Labeling of P260: Do not breathe dust. Chemicals. P314: Get medical advice/attention if you feel unwell. P501: Dispose of contents/container to a licensed chemical disposal agency in Signal word: WARNING accordance with local/regional/national regulations. Pictograms: GHS08 Target organs: None known GHS Classification: \*STOT-RE (Category 2) GHS Label information: Hazard statement: \*H373: May cause damage to organs (lungs) through prolonged or repeated exposure (inhalation). \* Respirable dust particles containing crystalline silica may be generated by crushing. There are no known hazards associated with this material when used as recommended.

Ca Prop 65 - WARNING! This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 3	Composition / Information on Ingredients							
Chemical Name		CAS #	%	EINECS				
Calcium carbonate Quartz		1317-65-3 14808-60-7	≥ 99% 0.1-1.0%	215-279-6 238-878-4				
Section 4	First Aid Measures							

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: PROLONGED INHALATION OF PARTICULATE DUST MAY BE HARMFUL. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE ABRASIONS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Product will not burn or support fire. Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: Limestone reacts with acids to release carbon dioxide.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

 $\label{eq:conditions} \mbox{ for Safe Storage: Store in a cool, dry, well-ventilated area.}$ 

ERG: Emergency Response Guidebook.

Section 8	tion 8 Exposure Controls / Personal Protection						
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Limits.	Particulates not otherwise classified	TWA: 5 mg/m <sup>3</sup> respirable fraction	None established	None established			

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

	I.						
Section 9	Physical & Chemical Pro	operties					
Odor: No odor. Odor threshold: D pH: Data not availa	able. <b>point:</b> Data not available a not available	Flammability (s Explosion limit Vapor pressure Vapor density ( Relative densit	te (=1): Not applic: solid/gas): Data not a s: Lower / Upper: N (mm Hg): Data not Air = 1): Data not av y (Specific gravity): 0.001% @ 0°C in wa	available. lot flammable available ailable 2.85	Auto-ignitio Decomposit Viscosity: [ Molecular fo	efficient: Not ap n temperature: tion temperature Data not available ormula: CaCO <sub>3</sub> veight: 100.09	Not applicable ᇆ 826°C (1520°F)
Section 10	Stability & Reactivity						
Chemical stability Conditions to avoi	: Stable id: Avoid contact with acids.	Hazardo	us polymerization:	Will not occur.			
Incompatible mate	erials: Reacts with acids to libe	erate carbon dioxide					
Hazardous decom	position products: Carbon di	oxide.					
Section 11	Toxicological Information	on					
Serious eye dama Respiratory or ski Germ cell mutage Carcinogenity: Da NTP: Known to be IARC classified: Gr OSHA: No compon Reproductive toxi STOT-single expo STOT-repeated exx Aspiration hazard Potential health ef Inhalation: Dust ma Ingestion: Ingestion Skin: May cause a Eyes: May cause a Eyes: May cause a Changes and miliar Additional information	a human carcinogen (respirable oup 1: Carcinogenic to humans ent of this product present at lev city: Data not available sure: Data not available <b>posure:</b> Inhalation - May caus : Data not available ffects: ay cause congestion and irritati n may cause gastrointestinal irr	lable e). [crystalline silica] s. [crystalline silica]* vels greater than or e damage to organs on in nasal and resp itation and blockage sion with dust or chip halation of particula ugh, shortness of bi	equal to 0.1% is ident through prolonged o piratory passages. e. os. ate dust, may result in reath, emphysema, de	r repeated exposure silicosis, a disablin ecreased chest expa	e. [crystalline sili g pulmonary fibr ansion, and incre	ca]* osis characterized	d by fibrotic ty to tuberculosis.
Section 12	Ecological Information		<u> </u>				
Toxicity to algae: I Persistence and d Mobility in soil: N Other adverse effe Section 13 These disposal g	a and other aquatic invertebra No data available egradability: No data availabl	e Bioaccumu PBT and vF cannot be excluded s e disposal of catal	lative potential: No PVB assessment: No in the event of unpro	o data available fessional handling o nly. Federal requ	Iations may ap	ply to empty co a licensed chem	ntainer. State and/or local nical disposal agency.
UN/NA number:	•	ipping name: N	ot Regulated				
Hazard class: N Exceptions: No	Not applicable Pac	cking group: No I2 ERG Guide #	ot applicable	Reportable Qu	antity: No	Mar	ine pollutant: No
Section 15	Regulatory Information						
	red to be listed if the CAS number for	•			<b>D</b> 01		
Compor	ient	Listed	CERLCA (RQ) Not listed	RCRA code Not listed	DSL Not listed	NDSL Listed	WHMIS Classification
Calcium carbonate			Not noted				Ţ
Calcium carbonate	Additional Information						

IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure,

SDS No.: FF0190

#### Section 1 **Chemical Product and Company Information** HOME SCIENCE TOOLS CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 665 Carbon Street Billings, MT 59102 800-860-6272 For laboratory use only. Not for drug, food or household use. www.homesciencetools.com **IRON(II) SULFATE, HEPTAHYDRATE** Product Synonyms Ferrous Sulfate, 7-Hydrate Section 2 **Hazards Identification** Signal word: WARNING Precautionary statement: Pictograms: GHS07 P264: Wash hands thoroughly after handling. Target organs: Liver, Kidneys P270: Do not eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell. P302+P352: IF ON SKIN: Wash with plenty of water and soap. **GHS Classification:** P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Acute toxicity (Category 4) Remove contact lenses, if present and easy to do. Continue rinsing. Skin irritant (Category 2) P332+P313: If skin irritation occurs: Get medical attention. Eye irritant (Category 2) P337+P313: If eye irritation persists: Get medical attention. P362+P364: Take off contaminated clothing and wash it before reuse. GHS Label information: Hazard statement:. P501: Dispose of contents/container to a licensed chemical disposal agency in H302: Harmful if swallowed. accordance with local/regional/national regulations. H315: Causes skin irritation. H319: Causes serious eye irritation.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients							
Chemical Name	CAS #	%	EINECS				
Ferrous sulfate, heptahydrate	7782-63-0	100%	231-753-5				
Section 4 First Aid Measures							

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. May cause respiratory tract irritation.

EYE CONTACT: CAUSES IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

**Fire Fighting Measures** 

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Linits.	Iron salts, soluble, as Fe	TWA: 1 mg/m <sup>3</sup>	None established	TWA: 1 mg/m <sup>3</sup>	

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Pro	perties	
Appearance: Solid. Blue-green crystalline powder Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: 72°C (147°F) Boiling point: Decomposes Flash point: Not flammable	Evaporation rate (=1): Data not available Flammability (solid/gas): Not applicable Explosion limits: Lower / Upper: Not applicable Vapor pressure (mm Hg): 14.6 Vapor density (Air = 1): 9.6 Relative density (Specific gravity): 1.897 Solubility(ies): 16 g/100 ml water @ 20°C	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available Viscosity: Data not available. Molecular formula: FeSO <sub>4</sub> •7H <sub>2</sub> O Molecular weight: 278.02

#### Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Hygroscopic material. Efflorescent in dry air. Oxidizes in moist air forming a brown coating of basic ferric sulfate.

Incompatible materials: Strong oxidizers, alkalies, nitric acid. Aqueous solutions are oxidized slowly by air when cold, rapidly when hot. Rate of oxidation increased by addition of alkali or exposure to light.

Hazardous decomposition products: Oxides of sulfur.

#### Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 1480 mg/kg Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not available STOT-single exposure: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Inhalation may cause respiratory tract irritation. Ingestion: Ingestion can produce gastrointestinal tract disturbances, severe shock, vomiting, liver and kidney damage and even death. Skin: Contact with skin may cause irritation or allergic reaction. Eves: Contact with eves is irritating and can be damaging Signs and symptoms of exposure: See Potential health effects above. Additional information: RTECS #: NO8510000 Section 12 Ecological Information Toxicity to fish: Poecilia reticulata (fish, fresh water), LC50 = 925 mg/l/96 hours Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = 152 mg/l/48 hours Toxicity to algae: No data available Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soil: No data available PBT and vPvB assessment: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. **Disposal Considerations** Section 13 These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. Section 14 Transport Information UN/NA number: Not applicable Shipping name: Not Regulated Hazard class: Not applicable Packing group: Not applicable Reportable Quantity: 1,000 lbs. (454 kg) Marine pollutant: No 2012 ERG Guide # Not applicable **Exceptions:** Not applicable Section 15 **Regulatory Information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. WHMIS Classification DSL NDSL Component TSCA CERLCA (RQ) RCRA code Ferrous sulfate, heptahydrate Listed 1,000 lbs. (454 kg) Not listed Not listed Not listed Uncontrolled product

#### Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook. SDS No.: GG0120

#### Section 1 **Chemical Product and Company Information** HOME SCIENCE TOOLS CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 665 Carbon Street Billings, MT 59102 800-860-6272 For laboratory use only. Not for drug, food or household use. www.homesciencetools.com GLYCERIN Product Synonyms Glycerol Section 2 **Hazards Identification** This substance or mixture has not been classified at this time according Precautionary statement(s): to the Globally Harmonized System (GHS) of Classification and Labeling of Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear Chemicals. protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell. Signal word: Not classified Pictograms: Not classified Target organs: None known **GHS Classification:** Not classified GHS Label information: Hazard statement(s): Not classified

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on Ingredients				
Chemical Name		CAS #	%	EINECS	
Glycerin		56-81-5	100%	200-289-5	
Section 4	First Aid Measures				

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: DO NOT USE WATER. Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Linius.	Glycerin	TWA: 10 mg/m <sup>3</sup> (mist)	TWA: 5 mg/m <sup>3</sup> (respirable fraction)	None established	

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

								_
Section 9 Phys	sical & Chemical Proper	ties						
Appearance: Clear, colorle Odor: No odor. Odor threshold: Data not a pH: Approximately 7.0 Melting / Freezing point: 1 Boiling point: 290°C (554° Flash point: 177°C (351°F)	available.         F           8°C (64°F)         V           F)         R	Evaporation rate ( Ether = 1): >1       Partition coefficient: 2.6 calculated         Flammability (solid/gas): Data not available.       Auto-ignition temperature: 400°C (752°F)         Explosion limits: Lower / Upper: Data not available.       Decomposition temperature: Data not available.         Vapor density (Air = 1): Data not available       Viscosity: Data not available.         Relative density (Specific gravity): 1.2607 (25/25°C)       Molecular formula: HOCH2CHOHCH2OH         Solubility(ies): Complete       Molecular weight: 92.10						
Section 10 Stab	ility & Reactivity							
Chemical stability: Stable Conditions to avoid: Exce Incompatible materials: S Hazardous decomposition	trong oxidizers.	at. Absorbs mo	us polymerization: bisture from the air.	Will not occur.				
Section 11 Toxi	cological Information							
Acute toxicity: Oral-rat LD Skin corrosion/irritation: Serious eye damage/irritati Germ cell mutagenicity: D Carcinogenity: Data not ar NTP: No component of this IARC: No component of this IARC: No component of this OSHA: No component of thi Reproductive toxicity: Da STOT-single exposure: Da STOT-repeated exposure: Aspiration hazard: Data n Potential health effects: Inhalation: Inhalation of mis Ingestion: Ingestion is cons Skin: Skin contact shows m Eyes: May cause slight eye Signs and symptoms of ex Additional information: R	Dermal-rabbit - 18,700 mg/l tion: Rabbit - practically no ization: Data not available Data not available vailable product present at levels gr is product present at levels gr is product present at levels gr ta not available Data not available Data not available ot available st are irritating to the respira idered to be a very low haz o significant irritation. Not a e irritation.	n-irritating eater than or e reater than or greater than or tory tract. ard. bsorbed throug	equal to 0.1% is iden equal to 0.1% is iden gh the skin.	ified as probable, pos	ssible or confir	med human carcin		
Section 12 Ecol	ogical Information							
Toxicity to daphnia and otToxicity to algae: No data aPersistence and degradabMobility in soil: No data aOther adverse effects: AnSection 13Disp	Toxicity to fish: Low toxicity to aquatic organisms. LC50 (96 hour) fish >5,000 mg/l         Toxicity to daphnia and other aquatic invertebrates: EC50 (24 hour) Daphnia magna >10,000 mg/l         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal Considerations							
These disposal guideline								I
regulations may be differe Section 14 Tran	ent. Dispose of in accord isport Information	ance with all	local, state and fed	ieral regulations or	contract with	a licensed chem	ical disposal agency.	
	•	a now N						
Hazard class: Not appli Exceptions: Not applic	UN/NA number:Not applicableShipping name:Not RegulatedHazard class:Not applicablePacking group:Not applicableReportable Quantity:Marine pollutant:NoExceptions:Not applicable2012 ERG Guide #Not applicableReportable Quantity:NoMarine pollutant:No							
	ulatory Information							
A chemical is considered to be li	isted if the CAS number for the	anhydrous form TSCA		PCPA code	DSL	NDSL		_
Chronin			CERLCA (RQ)	RCRA code			WHMIS Classification	
Glycerin Section 16 Add	itional Information	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product	
	nonal monnation							

#### Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

### **GENERAL STORAGE CODE GREEN**

#### Section 1 Chemical Product and Company Information

### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

#### Page E1 of E2

#### CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

POTASSIUM CHLORIDE Product Synonyms Muriate of Potash / Potassium Muriate / Potassium Monochloride Section 2 **Hazards Identification** This substance or mixture has not been classified as hazardous according Precautionary statement: to the Globally Harmonized System (GHS) of Classification and Labeling of P312: Call a POISON CENTER or doctor if you feel unwell. Chemicals. Signal word: WARNING Pictograms: No symbol required Target organs: None known **GHS Classification:** Acute toxicity, oral (Category 5) GHS Label information: Hazard statement: H303: May be harmful if swallowed.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3	Composition / Information o	n Ingredients			
Chemical Name		CAS #	%	EINECS	
Potassium chloride Sodium chloride Calcium and Magne	esium chlorides and sulfates	7447-40-7 7647-14-5 Various	95.0 - 99.5% 0.3 - 3.7% 0.2 - 1.3%	231-211-8 231-598-3 Various	
Section 4	First Aid Measures				

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Linits.	Particles not otherwise classified	Not established	TWA: 15 mg/m <sup>3</sup> total dust	Not established	

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.				
Section 9 Physical & Chemical Prop	perties			
Appearance: Solid. White crystals or powder. Odor: No odor. Odor threshold: Data not available. pH: 5.4-10.0 (5% solution) Melting / Freezing point: 772-776°C (1423-1428°F) Boiling point: 1500°C (2732°F) Sublimes Flash point: Not applicable	Evaporation rate (=1): Data not Flammability (solid/gas): Data not Explosion limits: Lower / Upper: Vapor pressure (mm Hg): Approxin Vapor density (Air = 1): 2.57 Relative density (Specific gravity) Solubility(ies): 34.2 g/100 ml water	available. Auto Not applicable Decc mately zero Visca 1.986-1.990 Mole	tion coefficient: Data no -ignition temperature: I imposition temperature osity: Data not available cular formula: KCI cular weight: 74.56	Data not available : Data not available
Section 10 Stability & Reactivity				
Chemical stability: Stable Conditions to avoid: Excessive temperatures and Incompatible materials: Avoid contact with hot Nite chloride gas. May react violently with Bromine triflud Steel, building materials (such as cement), Bromine Hazardous decomposition products: None know Section 11 Toxicological Information	ric acid, may cause evolution of toxic N oride and may explode if mixed with Pc or Trifluoride. Potentially explosive rea n. See above reactions.	itrosyl chloride. Contact witth tassium permanganate and S	Sulfuric acid. Can react w	vith most metals, such as Iron or
Acute toxicity: Oral-rat LD50: 2,600 mg/kg Skin corrosion/irritation: Data not available Serious eye damage/irritation: Eyes-rabbit - 500 n Respiratory or skin sensitization: Data not availa Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels IARC: No component of this product present at level OSHA: No component of this product present at level OSHA: No component of this product present at level STOT-single exposure: Data not available STOT-repeated exposure: Data not available STOT-repeated exposure: Data not available Potential health effects: Inhalation: May cause respiratory irritation, coughin Ingestion: May cause nulsea, vomiting, diarrhea, a Skin: Contact may cause mild irritation includ Signs and symptoms of exposure: Conditions ag procedures to minimize potential hazards. Additional information: RTECS #: TS8050000	ble s greater than or equal to 0.1% is ident ls greater than or equal to 0.1% is iden els greater than or equal to 0.1% is ide g and shortness of breath. bdominal cramping, irregular heartbea ding stinging, watering and redness.	tified as probable, possible or ntified as a carcinogen or pote s, dehydration, and hyperten	confirmed human carcin ential carcinogen by OSH	IA.
Section 12 Ecological Information				
Toxicity to fish: Gambusia affinis (fish, fresh water Toxicity to daphnia and other aquatic invertebrat Toxicity to algae: Scenedesmus subspicatus (Algae Persistence and degradability: No data available Mobility in soil: No data available Other adverse effects: An environmental hazard c	es: Daphnia magna (Crustacea), EC1 e), EC50 = 2,500 mg/L/72 hours Bioaccumulative potential: No PBT and vPvB assessment: N	o data available o data available	al.	
Section 13 Disposal Considerations				
These disposal guidelines are intended for the regulations may be different. Dispose of in acc				
Section 14 Transport Information (U				
UN/NA number: Not applicable Ship Hazard class: Not applicable Pack	ping name: Not Regulated ing group: Not applicable ERG Guide # Not applicable	Reportable Quantity:	No <b>Mari</b>	ne pollutant: No
Section 15 Regulatory Information				
A chemical is considered to be listed if the CAS number for				
Component Potassium chloride	TSCA         CERLCA (RQ)           Listed         Not listed	RCRA code         DSI           Not listed         Lister		WHMIS Classification Uncontrolled product
Section 16 Additional Information				
The information contained herein is furnished without warra				

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

	SALETT DATA SHEET	
Section 1 Chemical Product and	d Company Information	Page E1 of E2
HOME SCIENCE TOOLS 665 Carbon Street Billings, MT 59102 800-860-6272 vww.homesciencetools.com		CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.
Product LITHIUM CHLORIDE		
Synonyms None		
Section 2 Hazards Identification	1	
Signal word: WARNING Pictograms: GHS07 Target organs: Kidneys, Central nervous syste GHS Classification: Acute toxicity, oral (Category 4) Skin irritation (Category 2) Eye irritation (Category 2A) GHS Label information: Hazard statement: H302: Harmful if swallowed. H315: Causes skin irritation. H319: Causes serious eye irritation.	m, Reproductive system, Skin, Eyes	<ul> <li>Precautionary statement:</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P270: Do not eat, drink or smoke when using this product.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.</li> <li>P302+P352: IF ON SKIN: Wash with plenty of water and soap.</li> <li>P332+P313: If skin irritation occurs: Get medical attention.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P362+P364: Take off contaminated clothing and wash it before reuse.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on Ingredients				
Chemical Name		CAS #	%	EINECS	
Lithium chloride		7447-41-8	>99%	231-212-3	
Section 4	First Aid Measures				

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Readily absorbs moisture, keep dry.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Linits.	Lithium chloride	Not established	Not established	Not established	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator

Conditions to avoid: Incompatible materia Hazardous decompo	int: 614°C (1137°F) (2520°F) available Stability & Reactivity itable Readily absorbs moisture, keep	Evaporation ra Flammability ( Explosion limi /apor pressur /apor density Relative density	ate ( = 1): Data not av (solid/gas): Data not av its: Lower / Upper: D re (mm Hg): Data not av (Air = 1): Data not av (Specific gravity): 2.068 : 832 g/L @ 20°C in w	available. ata not available available ailable	Auto-ignitie Decompos Viscosity:	on temperature: [ ition temperature: Data not available. formula: LiCl	: Data not available.		
Odor: No odor. Odor threshold: Data oh: 7-8 (50 g/L) Melting / Freezing po Boiling point: 1382°( Flash point: Data not Section 10 Chemical stability: S Conditions to avoid: Incompatible materia Hazardous decompo	int: 614°C (1137°F) (2520°F) available Stability & Reactivity itable Readily absorbs moisture, keep	Flammability ( Explosion limi /apor pressur /apor density Relative density	solid/gas): Data not a its: Lower / Upper: D re (mm Hg): Data not a (Air = 1): Data not ava (Specific gravity): 2.068	available. ata not available available ailable	Auto-ignitie Decompos Viscosity: Molecular f	on temperature: [ ition temperature: Data not available. formula: LiCl	Data not available Data not available.		
Chemical stability: S Conditions to avoid: Incompatible materia Hazardous decompo	table Readily absorbs moisture, keep			alei.		Acigin: 42.00			
Conditions to avoid: Incompatible materia Hazardous decompo	Readily absorbs moisture, keep								
		Chemical stability:       Stable       Hazardous polymerization:       Will not occur.         Conditions to avoid:       Readily absorbs moisture, keep dry.       This solution in water is corrosive to metals.         Incompatible materials:       Strong oxidizers, strong acids, and bromine trifluoride.         Hazardous decomposition products:       Hydrogen chloride and lithium compounds.							
Section 11	Toxicological Information								
Germ cell mutagenic Carcinogenity: Data NTP: No component of IARC: No component of OSHA: No component Reproductive toxicity STOT-single exposus STOT-repeated expoor Aspiration hazard: D Potential health effect Inhalation: Inhalation Ingestion: Ingestion m ingestion can also cau Skin: Contact causes Signs and symptoms functions. Exercise ap Additional informatic	f this product present at levels growthis product present growthis product present growthis present at levels growthis present	reater than or o greater than or greater than o eyes, nose an ears, nausea, v rtbeat, low blo velling. welling. may have effec	equal to 0.1% is identi r equal to 0.1% is ident d throat. omiting, diarrhea, diffic od pressure, loss of ap cts on the central nervo	fied as probable, po tified as a carcinoge ulty speaking, drow petite, thirst and cire	ossible or confir en or potential c rsiness, twitchin culatory failure.	med human carcin carcinogen by OSH	HA.		
Section 12	Ecological Information								
Toxicity to fish: Oncorhynchus mykiss (fish, fresh water), LC50 = 0.17 mg/L/6.5-11 hours         Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal Considerations									
	elines are intended for the dis different. Dispose of in accord Transport Information (US	dance with al	I local, state and fede						
UN/NA number: N Hazard class: Not Exceptions: Not a	lot applicable Shippin applicable Packin	ng name:   N g group:   N	Not Regulated lot applicable Not applicable	Reportable Qua	antity: No	Mari	ine pollutant: No		
Section 15	Regulatory Information								
	to be listed if the CAS number for the	,			Dei	NDEL	WHMIS Classification		
Componer	ι	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL			
		Lictor	Not listed	Not listed	Notlistad	Not listed			
Lithium chloride		Listed	Not listed	Not listed	Not listed	Not listed	Not listed		

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

#### Section 1 Chemical Product and Company Information

### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

#### Page E1 of E2

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

Product p-DICHLOROBENZENE	
Synonyms 1,4-Dichlorobenzene / para-Dichlorobenzene	
Section 2 Hazards Identification	
Signal word: WARNING         Pictograms: GHS08 / GHS09         Target organs: Liver, Kidneys, Lungs, Central nervous system         Image:	<ul> <li>Precautionary statement:</li> <li>P201: Obtain special instructions before use.</li> <li>P202: Do not handle until all safety precautions have been read and understood</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P273: Avoid release to the environment.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P337+P313: If eye irritation persists: Get medical attention.</li> <li>P308+P311: IF exposed or concerned: Call a POISON CENTER or doctor.</li> <li>P391: Collect spillage.</li> <li>P405: Store locked up.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65: This chemical is known to the State of California to cause cancer or reproductive toxicity.

Section 3	Composition / Information on Ingredients					
Chemical Name		CAS #	%	EINECS		
p-Dichlorobenzene		106-46-7	100%	203-400-5		
Section 4	First Aid Measures					

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection						
Expective Limiter	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Limits:	p-Dichlorobenzene	TWA: 10 ppm / 60 mg/m <sup>3</sup> (A3)	TWA: 75 ppm / 450 mg/m <sup>3</sup>	Not established			

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.			, nananig at room to	iperataree: in ducty					
Section 9	Physical & Chemical Prop	erties							
	White, crystalline powder ta not available le oint: 53°C (127.4°F) C (345.2°F)	Evaporation ra Flammability (s Explosion limit Vapor pressure Vapor density ( Relative densit	te (Butyl acetate = 1) solid/gas): Data not a sts: Lower / Upper: E e (mm Hg): 0.6 @ 20 (Air = 1): 5.1 ty (Specific gravity): Insoluble in water	available Data not available °C	Auto-igniti Decompos Viscosity: Molecular	oefficient: Data no on temperature: I ition temperature Data not available formula: C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> weight: 147.00	Data not available : Data not available		
Section 10	ction 10 Stability & Reactivity								
Incompatible mater	Stable : Excessive temperatures and c ials: Strong oxidizers and reduc osition products: Carbon oxide	pen flame. ing agents.	us polymerization:	Will not occur.					
Section 11	Toxicological Information								
Skin corrosion/irrita Serious eye damag Respiratory or skin Germ cell mutageni Carcinogenity: Dat NTP: Reasonably an IARC classified: Grou OSHA: No compone Ca Prop 65: This che Reproductive toxici STOT-single expose STOT-repeated exp Aspiration hazard: Potential health effe Inhalation: Inhalation Ingestion: Ingestion Skin: Contact with si Eyes: Contact with si Eyes: Contact with si Signs and symptom to minimize potential Additional informat	ticipated to be a human carcinog up 2B: Possibly carcinogenic to I nt of this product present at level mical is known to the State of C ity: Data not available ure: Data not available Data not available Data not available ects: n may cause cough, drowsiness, causes diarrhea. Further see In kin may cause irritation. ayes causes irritation with rednes no of exposure: The substance hazards. ion: RTECS #: CZ4550000	le jen. s greater than or alifornia to cause headache, naus halation. s and pain.	equal to 0.1% is iden e cancer or reproductiv eea, shortness of brea	ve toxicity. th, vomiting and burr	ning sensation.				
Section 12	Ecological Information								
Toxicity to daphnia Toxicity to algae: Se Persistence and deg Mobility in soil: No Other adverse effec Section 13 These disposal gui	bomis macrochirus (bluegill) LC5 and other aquatic invertebrate elenastrum capricornutum (algae gradability: No data available data available ts: The substance is toxic to aq Disposal Considerations delines are intended for the d different. Dispose of in acco	s: Daphnia mag ) EC50: 1.6 mg/l Bioaccumu PBT and vi uatic organisms. isposal of catal	na (water flea) EC50: _/96H (inhibition of gro <b>ulative potential:</b> No <b>PvB assessment:</b> No Bioaccumulation of ti log-size quantities c	owth rate) data available o data available his chemical may occ only. Federal regula	cur in fish. ations may a	pply to empty cor			
Section 14	Transport Information (US				contract with	ra licenseu chem	lical disposal agency.		
UN/NA number: Hazard class: Not Exceptions: Not Section 15	Not applicable Shipp ot applicable Packi	ing name: N ng group: No	ot Regulated	Reportable Qua	antity: No	Mari	i <b>ne pollutant:</b> No		
	d to be listed if the CAS number for the	ne anhydrous form	is on the Inventory list.						
Compone		TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification		
p-Dichlorobenzene		Listed	Not listed	U072	Listed	Not listed	<b>(a) (7)</b> B3; D2A		
Section 16	Additional Information								
	ed herein is furnished without warrar suitability and completeness of inform								

dent determination contained nerein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.



SDS Document Safety Data Sheet

# **GlassAction**®

## 1. Product Identification

 Product Name:
 GlassAction<sub>®</sub>, Crushed Glass Abrasive

 Product Description:
 Abrasive media manufactured from recycled glass

 Product Identifier:
 Soda-Lime Glass, Glass Oxide

 Manufacturer:
 Environmental Abrasives Warehouse LLC
 Emergene

 4301 Federal Way

Emergency Phone:

**CHEMTREC** 800-424-9300

## 2. Hazard Identification

**Emergency Overview**: Non-flammable white solid or powder. Abrasive particulate may cause minor eye and skin irritation. Inhalation of high concentrations may cause transient upper respiratory irritation. Product is noncombustible and stable.

Inhalation: Yes, Ingestion: No, Skin: No, Other: No

### Primary Route(s) of Entry: Potential Health Effects Acute:

**Eye**: Dusts may cause minor irritation, may scratch the cornea or cause other mechanical injury to the eye.

Skin: May cause minor irritation. Not absorbed through skin.

Boise, ID 83715 (208) 947-1351

Ingestion: Relatively non-toxic. Ingestion is not anticipated under normal working conditions.

Inhalation: Product will act as a nuisance dust. Inhalation of high concentrations of dust may cause

coughing and mild, transitory respiratory irritation. May cause slight to moderate irritation of mucous membranes. Chronic:

**Inhalation**: Long-term dust inhalation in excess of the PEL or TLV may decrease the ability of the lungs to clear particulate matter which may cause shortness of breath and increased susceptibility to respiratory disease. **Signs And Symptoms**: Irritation, redness, pain, tear formation, blurred vision, light sensitivity, shortness of breath, decreased chest expansion, dry cough, and fatigue.

**Medical Conditions Aggravated By Exposure**: Repeated inhalation of dusts over time may aggravate pre-existing respiratory disease. Precautions should be taken to alleviate the pre-existing medical condition. **Target Organs**: Lungs

Carcinogenicity:

NTP: No, IARC: No, OSHA: No

Glass abrasive is not classified as a hazardous material by the criteria of the OSHA Hazard Communication Standard, Title 29, Code of Federal Regulations, Section 1910.1200, Hazard Communication. Nuisance Dust concern **Contains no free (or crystalline) silica; all components are amorphous/non-crystalline** 

## 3. Composition/Information on Ingredients

Common Name	•	Crushed Glass	Typically	
Synonyms	Recycled Glass,	Soda-Lime Dioxide Glass	Silicon Dioxide (fused) SiO <sub>2</sub>	72%
CAS Number	-	65997-17-3	Sodium Oxide - Na <sub>2</sub> O	15%
Color/Appeara	nce	Brownish	Soda Ash-CaO	10%
Odor		Odorless	Other	Trace

## 4. First Aid Information

- **Ingestion:** Do not induce vomiting.
- Inhalation: Remove to fresh air. If symptoms persist, obtain medical attention.
- Skin Contact: Soak in warm water.
- Eye Contact: Flush with water.

## 5. Fire Fighting Measures

• Flash Point: N/A



# SDS Document Safety Data Sheet

- Flammable Properties: Material will not burn. Use media that is appropriate for fighting surrounding fire.
- **Clothing:** Wear appropriate protective clothing.
- **Respirators:** Wear a NIOSH-approved (or equivalent) respirator.



# SDS Document Safety Data Sheet

## 6. Accidental Release Measures

Vacuum or sweep up material and place in a disposal container. Do not allow material to enter sewer or waterways. This material is not defined as hazardous under 40 CFR 261. Disposal in a landfill in accordance with all applicable federal, state, and local laws or regulations is recommended.

## 7. Handling and Storage

• Handling

•

Minimize dust generation and accumulation. Use with adequate ventilation, and avoid breathing dusts. **Storage** 

Store in a dry place.

## 8. Exposure Controls and Personal Protection

- **VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation. Local exhaust ventilation is preferred, and should be designed by a professional industrial hygienist.
- **RESPIRATORY PROTECTION:** In enclosed spaces maintain oxygen levels above 19.5%. Use supplied air respiratory protection if oxygen levels are below 19.5%. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent State standards.
- **EYE PROTECTION:** Splash goggles or safety glasses are recommended.
- HAND PROTECTION: Wear any polymer gloves resistant to tears if prolonged exposure to powder is expected.
- **BODY PROTECTION:** Use body protection appropriate for task.

## 9. Physical and Chemical Properties

CAS Number	65997-17-3	Physical State	Grain or Powder
Color/Appearance	Brownish	Specific Gravity	2.45 – 2.55 g/cm <sup>3</sup>
pH	NA	Max Use Temperature	<680 °C
Solubility	Negligible	Melting Point	680 °C
Percent Volatile	0 %	Molecular Formula	Soda-Lime Glass

## 10. Stability and Reactivity

Material is stable. No known conditions causing instability. There are no known incompatible materials.

### 11. Toxicological Information

Poses little or no immediate hazard. This material is stable.

### 12. Ecological Information

Poses little or no immediate hazard. This material is stable.

### 13. Disposal Considerations

This material, if discarded, is not defined as hazardous under 40 CFR 261. Disposal in a landfill in accordance with applicable federal, state, and local laws or regulations is recommended.

### 14. Transportation Information

No DOT labels are required for this material, and no DOT Hazard I.D. Number has been assigned, and no DOT shipping restrictions apply.

### 15. Regulatory Information

Judgments as to the suitability of the information herein are for purchaser's purposes and are necessarily purchaser's responsibility. Although reasonable care has been taken in the preparation of such information, ENVIRONMENTAL ABRASIVES makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchasers intended purposes or for consequences of its use.

### 16. Other Information

Reviewed As of 01/04/2021

#### Section 1 Chemical Product and Company Information

### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

#### CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only.

Not for drug, food or household use.

#### SODIUM BORATE, DECAHYDRATE Product Synonyms Sodium Tetraborate ; Borax Section 2 **Hazards Identification** Signal word: DANGER Precautionary statement: Pictograms: GHS08 / GHS07 P201: Obtain special instructions before use Target organs: None known. P202: Do not handle until all safety precautions have been read and understood. P264: Wash hands thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical attention. GHS Classification: P308+P313: IF exposed or concerned: Get medical attention. Eye irritation (Category 2A) P405: Store locked up. Reproductive toxicity (Category 1B) P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations. GHS Label information. Hazard statement: H319: Causes serious eve irritation. H360: May damage fertility or the unborn child.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Inform	n 3 Composition / Information on Ingredients						
Chemical Name	CAS #	%	EINECS				
Sodium borate, decahydrate	1303-96-4	100%	215-540-4				
Section 4 First Aid Measures							

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: This product is an inherent fire retardant. There are no unusual fire and explosion hazards.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances

Section 8	Exposure Controls / Personal Protection						
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
	Borate compounds, inorganic	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup> (A4)	None established	None established			

Engineering controls: Facilities storing or utilizing this material should be equipped with an evewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Prop	perties	
Appearance: White, crystalline powder Odor: No odor Odor threshold: Data not available pH: Data not available Melting / Freezing point: 62°C (144°F) Boiling point: Data not available Flash point: Data not available	Evaporation rate (=1): Data not available Flammability (solid/gas): Not flammable Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): Data not available Relative density (Specific gravity): 1.73 Solubility(ies): Soluble in water	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available Viscosity: Data not available Molecular formula: Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> •10H <sub>2</sub> O Molecular weight: 381.37
Section 10 Stability & Reactivity		

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: When heated, loses water, eventually forming anhydrous borax.

Incompatible materials: Strong acids, oxidizers and reducing agents.

Hazardous decomposition products: Boron oxide and sodium oxides.

Section 11 **Toxicological Information** 

Acute toxicity: Oral-rat LD50: 2,600 mg/kg ; Inhalation-rat LC50: >2.0 mg/l ; Dermal-rabbit LD50: >10,000 g/kg

Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

#### Aspiration hazard: Data not available Potential health effects:

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion: Ingestion may cause gastrointestinal irritation. Symptoms of over-exposure my include nausea, vomiting and diarrhea.

Skin: Contact may cause irritation.

Eyes: Contact may cause irritation.

Signs and symptoms of exposure: Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed. Human epidemiological studies show no increase in pulmonary disease in occupational populations with cronic exposures to boric acid dust and sodium borate dust. A recent epidemiological study under the conditions of normal occupational eposure to borate dusts indicated no effect on fertility.

Additional information: RTECS #: VZ2275000

#### Section 12

**Ecological Information** Toxicity to fish: LC50 - Carassius auratus (goldfish) - 178 mg/l - 72 h

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 1,085 - 1,402 mg/l - 48 h

Toxicity to algae: IC50 - Desmodesmus subspicatus (green algae) - 158 mg/l - 96 h

Persistence and degradability: No data available Bioaccumulative potential: No data available

Mobility in soil: No data available PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

#### Section 13 **Disposal Considerations**

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. Transport Information Section 14

•						
UN/NA number: Not applicable Hazard class: Not applicable Exceptions: Not applicable	Shipping name: N Packing group: No 2012 ERG Guide #	ot applicable	Reportable Quantity: No		Mari	ine pollutant: No
Section 15 Regulatory Information						
A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.						
Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Sodium borate, decahydrate	Listed	Not listed	Not listed	Listed	Not listed	T D2A
Section 16 Additional Information	tion					
he information contained herain is furnished without warranty of any kind. Employers should use this information only as a supplement to other information asthered by them and must make independent						

bendent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook

**GENERAL STORAGE CODE GREEN** 

Page E1 of E2

#### Section 1 Chemical Product and Company Information

### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

## CHEMTREC 24 Hour Emergency

Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

#### Product SODIUM CARBONATE, ANHYDROUS

# Synonyms Soda Ash Section 2 Hazards Identification

Signal word: WARNING Pictograms: GHS07 Target organs: None known.



GHS Classification: Eye irrit. (Category 2A) GHS Label information: Hazard statement: H319: Causes serious eye irritation. Precautionary statement: P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several

P307+P313: Feys in the FES. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical advice/attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on Ingredients					
Chemical Name		CAS #	%	EINECS		
Sodium carbonate		497-19-8	100%	207-838-8		
Section 4	First Aid Measures					

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Sodium carbonate reacts with hydrated lime to form caustic soda. Special care should be taken where lime and sodium carbonate are handled in the same area.

#### Section 6 Accidental Release Measures

Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section	7	
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3

#### Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.

#### Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Section 8 **Exposure Controls / Personal Protection Chemical Name** ACGIH (TLV) OSHA (PEL) NIOSH (REL) Exposure Limits: Sodium carbonate None established. None established None established Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low. Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator. **Physical & Chemical Properties** Section 9 Appearance: Solid, white powder. Evaporation rate ( = 1): Data not available Partition coefficient: Data not available Odor: No odor. Flammability (solid/gas): Data not available. Auto-ignition temperature: Data not available Odor threshold: Data not available. Explosion limits: Lower / Upper: Not flammable Decomposition temperature: 1000°C (1832°F) pH: Data not available Vapor pressure (mm Hg): Data not available Viscosity: Data not available. Molecular formula: Na<sub>2</sub>CO<sub>3</sub> Melting / Freezing point: 864°C (1587°F) Vapor density (Air = 1): Data not available Boiling point: Decomposes Relative density (Specific gravity): 2.533 Molecular weight: 105.99 Flash point: Not flammable Solubility(ies): 17% @ 20°C in water Section 10 Stability & Reactivity Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Excessive temperatures. Hygroscopic material, avoid moisture. Incompatibilities with other materials: Acids cause decompostion liberating gaseous carbon dioxide. When mixed with lime dust and water, corrosive and caustic soda may be produced. Hazardous decomposition products: Carbon dioxide. Section 11 **Toxicological Information** Acute toxicity: Oral-rat LD50: 4090 mg/kg; Inhalation-rat LC50: 2.3 mg/l/2 hours; Dermal-rat LD50: 2210 mg/kg Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not available STOT-single exposure: Data not available. STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed. Skin: May be harmful if absorbed through skin. Causes skin irritation. Eyes: Causes eye irritation. Signs and symptoms of exposure: Burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Additional information: RTECS #: VZ4050000 Section 12 **Ecological Information** Toxicity to fish: LC50 - Lepomis macrochirus (Bluegill) - 300 mg/l - 96 h Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 265 mg/l - 48 h Toxicity to algae: No data available Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soil: No data available PBT and vPvB assessment: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Section 13 **Disposal Considerations** These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. Section 14 **Transport Information** UN/NA number: Not applicable Shipping name: Not Regulated Hazard class: Not applicable Packing group: Not applicable Reportable Quantity: No Marine pollutant: No 2012 ERG Guide # Not applicable **Exceptions:** Not applicable Section 15 **Regulatory Information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. DSL NDSL WHMIS Classification RCRA code Component TSCA CERLCA (RQ) Sodium carbonate Listed Not listed Not listed Not listed Not listed D2B Section 16 **Additional Information**

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

**GENERAL STORAGE CODE GREEN** 

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

For laboratory use only. Not for drug, food or household use. Page E1 of E2

#### Section 1 Chemical Product and Company Information

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### Product STRONTIUM CHLORIDE, HEXAHYDRATE

Synonyms None listed

#### Section 2 Hazards Identification

Signal word: DANGER Pictograms: GHS05 Target organs: None known



**GHS Classification:** Eye damage (Category 1)

GHS Label information: Hazard statement: H318: Causes serious eye damage.

#### Precautionary statement:

P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER or doctor.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Strontium chloride		10025-70-4	100%	233-971-6 (anhydrous)	
Section 4	First Aid Measures				

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection							
Exposuro Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)				
Exposure Limits:	Strontium chloride	Not established	Not established	Not established				

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.								
Section 9	Physical & Chemical Pro	perties						
Appearance:Solid, white crystalsEvaporation rate (=1):Data not availablePartition coefficient:Data not availableOdor:No odorFlammability (solid/gas):Data not availableAuto-ignition temperature:Data not availableOdor threshold:Data not availableExplosion limits:Lower / Upper:Data not availableDecomposition temperature:Data not availablepH:Data not availableVapor pressure (mm Hg):NegligibleViscosity:Data not availableMelting / Freezing point:868°C (1594°F)Vapor density (Air = 1):Data not availableMolecular formula:SrCl_2-6H_2OBoiling point:Data not availableSolubility(ies):Soluble in waterMolecular weight:266.62							Data not available Data not available	
Section 10	Stability & Reactivity							
Chemical stability: S Conditions to avoid: Incompatible material	Excessive temperatures and		us polymerization: in air and deliquesce					
Hazardous decompos	sition products: May releas	e corrosive hydrog	jen chloride.					
Section 11	Toxicological Information	า						
Skin corrosion/irritati Serious eye damage/ Respiratory or skin s Germ cell mutagenici Carcinogenity: Data NTP: No component of IARC: No component of IARC: No component Ca Prop 65: This produ Reproductive toxicity STOT-single exposur STOT-repeated exposur STOT-repeated exposur Aspiration hazard: D Potential health effect Inhalation: May cause Ingestion: Large oral of Skin: May cause irritat Eyes: May cause irritat	Acute toxicity: Data not available Skin corrosion/irritation: Data not available Serious eye damage/irritation: Eyes-rabbit - Severe irritant. Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. Reproductive toxicity: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: May cause irritation of the respiratory tract. Symptoms may include coughing and shortness of breath. Ingestion: Large oral doses may cause irritation of the gastrointestinal tract. Skin: May cause irritation with redness and pain. Eyes: May cause irritation with redness and pain. Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.							
Section 12	Ecological Information							
Toxicity to algae: No of Persistence and degr Mobility in soil: No da Other adverse effects	nd other aquatic invertebra data available adability: No data available ata available : An environmental hazard o	Bioaccumu PBT and vF annot be excluded	Ilative potential: No PvB assessment: N	o data available	or disposal.			
	Disposal Considerations							
	elines are intended for the liferent. Dispose of in ac							
	Transport Information (L						.ca. alopooal agonoy.	
UN/NA number: N		ping name: N	•					
Hazard class: Not		king group: No	0	Reportable Qua	antity: No	Marii	ne pollutant: No	
Exceptions: Not a		2 ERG Guide #			-			
	Regulatory Information							
	o be listed if the CAS number for	the anhydrous form	is on the Inventory list.					
Componen	t	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification	
Strontium chloride		Listed	Not listed	Not listed	Listed	Not listed	Not listed	
Section 16	Additional Information							
							d by them and must make indepen-	

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook. Section 1

#### SAFETY DATA SHEET

#### Chemical Product and Company Information

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### **GENERAL STORAGE CODE GREEN**

Page E1 of E2

#### CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

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 Product
 ZINC OXIDE

 Synonyms
 Zinc White / Zinc Monoxide

#### Section 2 Hazards Identification

Signal word: WARNING Pictograms: GHS09 Target organs: None known



GHS Classification: Aquatic toxicity, acute (Category 1) Aquatic toxicity, chronic (Category 1)

#### GHS Label information. Hazard statement:

H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long lasting effects. Precautionary statement:

P273: Avoid release to the environment. P391: Collect spillage. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3	Composition / Information on Ingredients						
Chemical Name		CAS #	%	EINECS			
Zinc oxide		1314-13-2	>99.9%	215-222-5			
Section 4	First Aid Measures						

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure Controls / Personal Protection							
Expective Limiter	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)				
Exposure Limits:	Zinc oxide	TWA: 2 R ma/m <sup>3</sup> STEL: 10 R ma/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> Respirable fraction	TWA: 5 mg/m <sup>3</sup> STEL: C 15 mg/m <sup>3</sup>				

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.							
Section 9	Physical & Chemical Prop	oerties					
Appearance: Solid. Odor: No odor Odor threshold: Da pH: Data not availab Melting / Freezing p Boiling point: Data Flash point: Data not	ivailable available Data not available available railable 5.1	Auto-igniti Decompos Viscosity: Molecular	oefficient: Data n on temperature: ition temperature Data not available formula: ZnO weight: 81.37	Data not available : Data not available			
Section 10	Stability & Reactivity						
Incompatible mater	Stable : Excessive temperatures and ials: Chlroinated rubber above osition products: Sublimes w	heat. 216°C, active m	ous polymerization: etals, e.g. magnesium				
Section 11	Toxicological Information						
Skin corrosion/irrita Serious eye damag Respiratory or skin Germ cell mutageni Carcinogenity: Dat NTP: No component IARC: No component OSHA: No component Ca Prop 65: This pro Reproductive toxici STOT-single exposed STOT-repeated exp Aspiration hazard: Potential health effe Inhalation: Inhalation Ingestion: Ingestion Skin: Prolonged or r Eyes: Contact may of Signs and symptom	Section 11       Toxicological information         Acute toxicity: Data not available         Skin corrosion/irritation: Data not available         Respiratory or skin sensitization: Data not available         Germ cell mutagenicity: Data not available         Carcinogenity: Data not available         TP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.         IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.         Reproductive toxicity: Data not available         STOT-repeated exposure: Data not available         Aspiration hazard: Data not available         Potential health effects:         Inhalation: Inhalation may cause sore throat, headache, fever, nausea, vomiting, weakness, muscle pain. Symptoms may be delayed.         Ingestion: Ingestion may cause adominal pain, diarrhea, nausea, vomiting.         Skin: Prolonged or repeated contact may cause irritation.         Eyes: Contact may cause irritation.						
Section 12	Ecological Information						
Toxicity to daphnia Toxicity to algae: No Persistence and de Mobility in soil: No	gradability: No data available	es: EC50 - Daph Bioaccum PBT and v	nia magna (Water flea ulative potential: No PvB assessment: No	data available			
Section 13	Disposal Considerations						
regulations may be Section 14	delines are intended for the different. Dispose of in acc Transport Information (U	ordance with al S DOT / CANA	l local, state and fed DA TDG)				
UN/NA number: Hazard class: Not Exceptions: Not	t applicable Pack applicable 2012	ping name: N ing group: N ERG Guide #	0	Reportable Qua	antity: No	Mari	ine pollutant: No
Section 15	Regulatory Information	the sub-1 - 1	to an the table of the				
A chemical is considered Compone	d to be listed if the CAS number for	the anhydrous form	cERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Zinc oxide		Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product
		LISICG			Liotou	i tot notou	
Section 16	Additional Information		•	·			·
		ntv of anv kind. Er	nplovers should use this i	nformation only as a su	upplement to othe	er information gathere	ed by them and must make indepen-

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook. SDS No.: SS1090

#### Section 1 Chemical Product and Company Information

#### HOME SCIENCE TOOLS

SULFUR

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Product

#### CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

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## Synonyms Sulfur Flowers ; Sulfur Flour Section 2 **Hazards Identification** Signal word: WARNING Precautionary statement: Pictograms: GHS07 P264: Wash hands thoroughly after handling. Target organs: None known P280: Wear protective gloves/protective clothing/eye protection/face protection. P302+P352: IF ON SKIN: Wash with plenty of water and soap. P332+P313: If skin irritation occurs: Get medical attention. P362+P364: Take off contaminated clothing and wash it before reuse. GHS Classification: Skin irritation (Category 2) GHS Label information: Hazard statement: H315: Causes skin irritation

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on Ingredients						
Chemical Name		CAS #	%	EINECS			
Sulfur		7704-34-9	100%	231-722-6			
Section 4	First Aid Measures						

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Finely dispersed particles form explosive mixtures in air.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection							
Exposuro Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)				
Exposure Limits:	Sulfur	None established	None established	None established				

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Pro	erties							
Appearance: Solid yellow powder or lumps. Odor: Odor of rotten eggs Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: 116-121°C (242-251°F) Boiling point: 444°C (831°F) Flash point: 207°C (405°F) Closed Cup	Flammability ( Explosion limi Vapor pressur Vapor density Relative density	ate (=1): Not applica solid/gas): Data not a ts: Lower / Upper: 3 e (mm Hg): 0 @ 138° (Air = 1): Data not av (Specific gravity): 2.04 a Insoluble in water.	available. .3% / 46.0% C (280°F) ailable	Auto-igniti Decompos Viscosity: Molecular	oefficient: Data n ion temperature: bition temperature Data not available formula: S weight: 32.06	248°C (478°F) : Data not available.		
Section 10 Stability & Reactivity								
Chemical stability: Stable Conditions to avoid: Excessive temperatures, hea		bus polymerization: \ ame and other sources						
Incompatible materials: Reacts violently with strong	g oxidizing agen	ts. Corrosive to coppe	r and copper alloys.	Damp sulfur	will corrode steel.			
Hazardous decomposition products: Sulfur dioxi	le.							
Section 11 Toxicological Information								
Section 11       Toxicological Information         Acute toxicity: Oral-rat LD50: >5000 mg/kg ; Inhalation-rat LC50: 0.067 mg/L/4hours ; Dermal-rabbit LD50: >2000 mg/kg         Skin corrosion/irritation: Skin-rabbit - Irritant.         Serious eye damage/irritation: Data not available         Respiratory or skin sensitization: Data not available         Germ cell mutagenicity: Data not available         Carcinogenity: Data not available         NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.         IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.         OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Reproductive toxicity: Data not available         STOT-single exposure: Data not available         STOT-repeated exposure: Data not available         Potential health effects:         Inhalation: Burning sensation, diarhea.         Skin: Redness. Prolonged or repeated contact may cause dermatits.         Eyes: Redness, pain, blurred vision.         Signs and symptoms of exposure: See Potential health effects above.         Additional information: RTECS #: WS4250000								
Section 12 Ecological Information								
Toxicity to fish: Brachydanio rerio (fish, fresh water), LC50 = 866 mg/L/96 hours         Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = >10,000 mg/L/24 hours         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         PBT and vPvB assessment: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.								
Section 13 Disposal Considerations								
These disposal guidelines are intended for the regulations may be different. Dispose of in acc								
Section 14 Transport Information								
	name: Sulfur			0	Mari	ine pollutant: No		
	Hazard class:     9     Packing group:     III     Reportable Quantity:     No     Marine pollutant:     No       Exceptions:     No exceptions     2012 ERG Guide # 133     133							
Section 15 Regulatory Information								
A chemical is considered to be listed if the CAS number for	he anhydrous form	is on the Inventory list.						
Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification		
Sulfur	Listed	Not listed	Not listed	Listed	Not listed	В4		

#### Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

OXIDIZER STORAGE CODE YELLOW

Section 1 Chemical Product and Company Information

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#### Page E1 of E2

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Product	COPPER(II) NITRATE, TRIHYDRATE	
	Cupric Nitrate, Trihydrate	
Section 2	Hazards Identification	
GHS Classifi Oxidizing solid Acute toxicity, Skin irritation Eye irritation ( Aquatic acute Aquatic chron GHS Label in H272: May int H302: Harmfu H315: Causes H319: Causes	GHS03 / GHS07 / GHS09 s: Liver Cation: d (Category 2) oral (Category 4) (Category 2) (Category 2A) (Category 1) ic (Category 1) iformation: Hazard statement: tensify fire; oxidizer. al if swallowed.	<ul> <li>Precautionary statement:</li> <li>P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.</li> <li>P220: Keep away from clothing/incompatible/combustible materials.</li> <li>P221: Take any precaution to avoid mixing with combustibles and reducing agents.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P270: Do not eat, drink or smoke when using this product.</li> <li>P273: Avoid release to the environment.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P337+P313: If eye irritation persists: Get medical attention.</li> <li>P332+P352: IF ON SKIN: Wash with plenty of water and soap.</li> <li>P332+P313: If skin irritation occurs: Get medical attention.</li> <li>P362+P364: Take off contaminated clothing and wash it before reuse.</li> <li>P370+P378: In case of fire: Use water to extinguish.</li> <li>P391: Collect spillage.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Cupric nitrate		10031-43-3	100%	221-838-5 [anhydrous]	
Section 4	First Aid Measures				

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon<sup>®</sup> may provide limited control.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is a strong oxidizer which releases oxygen on heating. The oxygen will intensify any fire in the immediate surrounding. Contact with easily oxidizable, combustible substance or powdered metals may cause fire or explosion upon ignition from any source. Strong oxidizers may explode when shocked, or if exposed to heat, flame, or friction. Also may act as initiation source for dust or vapor explosions.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection						
Exposure Limiter	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)			
Exposure Limits:	Copper, dusts & mists, as Cu	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>			

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Appearance: Solid. Blue, del         Odor: Slight nitric acid odor.         Odor threshold: Data not available.         Melting / Freezing point: 114         Boiling point: Data not available.         Flash point: Non flammable         Section 10       Stabil         Chemical stability: Stable         Conditions to avoid: Avoid t         Incompatible materials: Struthazardous decomposition provide: Avoid t         Section 11       Toxicat         Acute toxicity: Oral-rat LD5         Skin corrosion/irritation: D.         Serious eye damage/irritation         Respiratory or skin sensitiz         Gern cell mutagenicity: Data         OSHA: No component of this productive toxicity: Data         STOT-single exposure: Data         STOT-single exposure: Data         Stortion hazard: Data not         Skin: Contact with skin cause         Eyes: Contact with skin cause	vailable.       F         4.5°C (238°F)       V         lable       F         lity & Reactivity       F         temperatures in excess of rong oxidizing agents, alur products: Nitrogen oxide       Note: S         ological Information       50: 940 mg/kg         bata not available       on: Data not available         on: Data not available       on: Data not available         ainable       roduct present at levels gr         product present at levels gr       a not available         at not available       a not available         ta not available       ta not available         cation: Data not available       ta not available         is product present at levels gr       product present at levels gr         a not available       ta not available         ta not available       ta not available	Evaporation ra Flammability (s Explosion limit Vapor pressure Relative densit Solubility(ies): Hazardo of 338°F, which o uminum cyanides es, copper oxide le greater than or e s greater than or o s greater than or o	y (Specific gravity): : Soluble in water. us polymerization: A cause decomposition. s, esters, sodium hypo es and copper dust. equal to 0.1% is identifiequal to 0.1% is identifiequal to 0.1% is identified equal to 0.1% is identified	vailable. ata not available 2.32 Vill not occur. phosphite, stannou: ied as a known or an fied as probable, po tified as a carcinoge	Auto-igniti Decompos Viscosity: Molecular Schloride and	sition temperature Data not available formula: Cu(NO- weight: 241.60	: Data not available re: Data not available. le. 93)2•3H2O Sinogen by IARC. SHA.
Odor:       Slight nitric acid odor.         Odor threshold:       Data not averallable.         Melting / Freezing point:       114         Boiling point:       Data not available.         Section 10       Stabil         Section 10       Stabil         Chemical stability:       Stabil         Incompatible materials:       String         Hazardous decomposition p       Section 11         Toxica       Acute toxicity:       Oral-rat LD5         Skin corrosion/irritation:       D       Serious eye damage/irritation:         Respiratory or skin sensitiz       Germ cell mutagenicity:       Data carcinogenity:         Garcinogenity:       Data not ava       NTP: No component of this pi         JARC:       No component of this pi       OSHA: No component of this pi         VASC:       No component of this pi       Aspiration hazard:       Data not ava         StoT-repeated exposure:       Data       Stabil       Stabilow	vailable.       F         4.5°C (238°F)       V         lable       F         lity & Reactivity       F         temperatures in excess of rong oxidizing agents, alur products: Nitrogen oxide       Note: S         ological Information       50: 940 mg/kg         bata not available       on: Data not available         on: Data not available       on: Data not available         ainable       roduct present at levels gr         product present at levels gr       a not available         at not available       a not available         ta not available       ta not available         cation: Data not available       ta not available         is product present at levels gr       product present at levels gr         a not available       ta not available         ta not available       ta not available	Flammability (s Explosion limit Vapor pressure Vapor density ( Relative densit Solubility(ies): Hazardo of 338°F, which of aminum cyanides es, copper oxide es, copper oxide greater than or e s greater than or e s greater than or e	solid/gas): Data not a is: Lower / Upper: D (Air = 1): 8.05 y (Specific gravity): Soluble in water. us polymerization: A cause decomposition. s, esters, sodium hypo es and copper dust. equal to 0.1% is identified equal to 0.1% is identifie	vailable. ata not available 2.32 Vill not occur. phosphite, stannou: ied as a known or an fied as probable, po tified as a carcinoge	Auto-igniti Decompos Viscosity: Molecular Schloride and	ion temperature: sition temperature sition temperature Data not available formula: Cu(NO weight: 241.60	: Data not available re: Data not available. le. 93)2•3H2O Sinogen by IARC. SHA.
Chemical stability: Stable Conditions to avoid: Avoid to Incompatible materials: Stru Hazardous decomposition p Section 11 Toxico Acute toxicity: Oral-rat LD5 Skin corrosion/irritation: D. Serious eye damage/irritatio Respiratory or skin sensitiz Germ cell mutagenicity: Da Carcinogenity: Data not ava NTP: No component of this p IARC: No component of this p OSHA:	temperatures in excess of rong oxidizing agents, alur products: Nitrogen oxide ological Information 50: 940 mg/kg Data not available on: Data not available ata not available ailable roduct present at levels gr product present at levels gr product present at levels gr a not available ta not available ta not available ta not available es irritation and/or burns. ises irritation and/or burns.	of 338°F, which o uminum cyanides es, copper oxide le greater than or e greater than or o s greater than or s.	cause decomposition. s, esters, sodium hypo es and copper dust. equal to 0.1% is identifi equal to 0.1% is identi equal to 0.1% is identi	phosphite, stannou: ed as a known or ai fied as probable, po lified as a carcinoge	nticipated carc ssible or confi n or potential	cinogen by NTP. irmed human carci carcinogen by OSI	SHA.
Conditions to avoid: Avoid f Incompatible materials: Stri Hazardous decomposition p Section 11 Toxico Acute toxicity: Oral-rat LD5 Skin corrosion/irritation: D Serious eye damage/irritatic Respiratory or skin sensitiz Germ cell mutagenicity: Da Carcinogenity: Data not ava NTP: No component of this p OSHA: No component of this p OSHA: No component of this Reproductive toxicity: Data STOT-single exposure: Data STOT-repeated exposure: Data STOT-repeated exposure: Data STOT-repeated exposure: Data STOT-repeated exposure: Data STOT-repeated exposure: Data STOT-repeated exposure: D Aspiration hazard: Data not Potential health effects: Inhalation: Harmful if inhaled Ingestion: Harmful if swallow Skin: Contact with skin cause Eyes: Contact with skin cause Eyes: Contact with skin cause Signs and symptoms of exp procedures to minimize poten Additional information: RTI Section 12 Ecolor Toxicity to fish: No data ava Persistence and degradabili Mobility in soil: No data ava Other adverse effects: An e	ological Information ological Information 50: 940 mg/kg bata not available on: Data not available ation: Data not available ation: Data not available atiable product present at levels gr product present at levels gr a not available ta not available ta not available ta not available ta so anot available ta not available ta so anot available ta so anot available ta so anot available ta not available ta so anot available ta not available	of 338°F, which o uminum cyanides es, copper oxide le greater than or e greater than or o s greater than or s.	cause decomposition. s, esters, sodium hypo es and copper dust. equal to 0.1% is identifi equal to 0.1% is identi equal to 0.1% is identi	phosphite, stannou: ed as a known or ai fied as probable, po lified as a carcinoge	nticipated carc ssible or confi n or potential	cinogen by NTP. irmed human carci carcinogen by OSI	SHA.
Hazardous decomposition p         Section 11       Toxical         Acute toxicity: Oral-rat LD5         Skin corrosion/irritation: D         Serious eye damage/irritation: D         Germ cell mutagenicity: Data         Carcinogenity: Data not avain         NTP: No component of this p         IARC: No component of this p         OSHA: No component of this p         OSHA: No component of this p         Aspiration hazard: Data not         Potential health effects:         Inhalation: Harmful if inhaled         Ingestion: Harmful if swallow         Skin: Contact with skin cause         Eyes: Contact with eyes caus         Signs and symptoms of exp         procedures to minimize poten         Additional information: RTI         Section 12       Ecolor         Toxicity to fish: No data avain         Toxicity to algae: No data avain         Persistence and degradabilif         Mobility in soil: No	products: Nitrogen oxide ological Information 50: 940 mg/kg Data not available on: Data not available zation: Data not available ailable product present at levels gr product present at levels gr product present at levels gr product present at levels gr product present at levels gr a not available ta not available Data not available ta not available ta vailable d. red. es irritation and/or burns. sposure: Material is extrem ntial hazards. ECS #: GL7875000	es, copper oxide le greater than or e greater than or o s greater than or s.	qual to 0.1% is identifiequal to 0.1% is identified to 0.1% identified to 0.1\% iden	ed as a known or ai fied as probable, po lified as a carcinoge	nticipated carc ssible or confi n or potential	cinogen by NTP. irmed human carci carcinogen by OSI	SHA.
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Toxicity to daphnia and othe Toxicity to algae: No data av Persistence and degradabili Mobility in soil: No data ava Other adverse effects: An e	gical Information						
	er aquatic invertebrates: vailable lity: No data available ailable environmental hazard cann	Bioaccumu PBT and vF	Ilative potential: No PvB assessment: No	data available	r disposal.		
•	osal Considerations						
These disposal guidelines regulations may be differen	nt. Dispose of in accord	rdance with all	local, state and fed	nly. Federal regul eral regulations or	ations may a contract with	apply to empty co h a licensed cher	ontainer. State and/or lo mical disposal agency.
	sport Information (US I						
UN/NA number: UN147 Hazard class: 5.1 Exceptions: Limited qua	Packing gro	oup: III	•	(Cupric nitrate) <b>ble Quantity:</b> 10 <b>G Guide #</b> 140	0 lbs (45.4 k	ig) Mai	rine pollutant: No
Section 15 Regul	latory Information	-					
A chemical is considered to be list	•	e anhydrous form	· · · · · · · · · · · · · · · · · · ·				
Component		TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classificati
Cupric nitrate		Listed	100 lbs (45.4 kg)	Not listed	Listed	Not listed	(a) (C; D2)

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

**SDS No.:** PP0700

#### Section 1 **Chemical Product and Company Information** HOME SCIENCE TOOLS CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 665 Carbon Street Billings, MT 59102 800-860-6272 For laboratory use only. Not for drug, food or household use. www.homesciencetools.com POTASSIUM PERMANGANATE Product Synonyms Chameleon Mineral Section 2 **Hazards Identification** Signal word: DANGER Precautionary statement: Pictograms: GHS03 / GHS07 / GHS09 P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Target organs: None known P220: Keep away from clothing/incompatible/combustible materials. P221: Take any precaution to avoid mixing with combustibles/acids/oxidizers. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. **GHS Classification:** P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or Oxidizing solid (Category 2) doctor if you feel unwell. Acute toxicity, ingestion (Category 4) P370+P378: In case of fire: Use water to extinguish. Aquatic acute (Category 1) P391: Collect spillage. Aquatic chronic (Category 1) P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations. GHS Label information: Hazard statement: H272: May intensify fire; oxidizer. H302: Harmful if swallowed. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long lasting effects.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Potassium permang	anate	7722-64-7	100%	231-760-3	
Section 4	First Aid Measures				

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE BURNS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon<sup>®</sup> may provide limited control.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Powerful oxidizing material, will accelerate burning when involved in a fire. Explosive in contact with sulfuric acid or hydrogen peroxide. May react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing, etc.). Spontaneously flammable on contact with glycerin or ethylene glycol.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Prot	ection		
Exposure Limitor	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	Manganese and inorganic compounds, as Mn	TWA: 0.2 mg/m <sup>3</sup> (A4)	STEL: C 5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> / STEL: 3 mg/m <sup>3</sup>

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Pro	perties	
Appearance: Solid, shiny, dark purple crystals. Odor: No odor. Odor threshold: Data not available. pH: 7-9 (20 g/L water) Melting / Freezing point: Decomposes Boiling point: Decomposes Flash point: Data not available	Evaporation rate (=1): Data not available Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): 5.47 Relative density (Specific gravity): 2.7032 @ 25°C Solubility(ies): 6.5 g/100 ml water @ 20°C	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: 150°C (302°F) Viscosity: Data not available. Molecular formula: KMnO <sub>4</sub> Molecular weight: 158.04
Section 10 Stability & Reactivity		

## Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Avoid exposure to incompatible materials and excessive temperatures.

Incompatible materials: Alcohols, arsenites, bromides, iodides, charcoal, hydrochloric acid, organic materials, ferrous or mercurous salts, hypophosphites, hyposulfites, sulfites, peroxides, oxalates, strong reducing agents, strong acids, formaldehyde, ethylene glycol, combustible organics, metal powders.

Hazardous decomposition products: Oxygen, oxides of potassium, oxides of manganese.

#### Section 11 **Toxicological Information**

Acute toxicity: Oral-rat LD50: 750 mg/kg Skin corrosion/irritation: Data not available Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not available STOT-single exposure: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Inhalation may cause burning sensation, cough, sore throat, shortness of breath, labored breathing. Symptoms may be delayed. Ingestion: Ingestion causes burning sensation, abdominal pain, diarrhea, nausea, vomiting, shock or collapse. Skin: Contact with skin causes redness, burns and pain. Eyes: Contact with eyes causes redness, pain and severe deep burns. Signs and symptoms of exposure: See Potential health effects above. Additional information: RTECS #: SD6475000 Section 12 Ecological Information Toxicity to fish: Gambusia affinis (fish, fresh water), LC100 = 18 mg/L/24 hours Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC0 = >0.63 mg/L Toxicity to algae: Anabaena sp. (Algae), EC50 = <0.5 mg/L/18 days/growth rate Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soil: No data available PBT and vPvB assessment: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. **Disposal Considerations** Section 13 These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. **Transport Information** Section 14 UN/NA number: UN1490 Shipping name: Potassium permanganate Reportable Quantity: 100 lbs (45.4 kg) Hazard class: 5.1 Packing group: || Marine pollutant: No 2012 ERG Guide # 140 Exceptions: Limited quantity equal to or less than 1 Kg Section 15 **Regulatory Information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. DSL WHMIS Classification RCRA code NDSL Component TSCA CERLCA (RQ) Potassium permanganate Listed 100 lbs (45.4 kg) D001 Listed Not listed C : E Section 16 **Additional Information** 

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook

#### Section 1 **Chemical Product and Company Information** HOME SCIENCE TOOLS CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 665 Carbon Street Billings, MT 59102 800-860-6272 For laboratory use only. Not for drug, food or household use. www.homesciencetools.com SILVER NITRATE Product Synonyms Silver(I) Nitrate Section 2 **Hazards Identification** Signal word: DANGER Precautionary statement(s): Pictograms: GHS03 / GHS05 / GHS09 P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Target organs: Kidneys, Liver, Eyes, Skin P220: Store away from clothing and combustible materials. P221: Take any precaution to avoid mixing with combustibles. P260: Do not breathe dust. P264: Wash hands thoroughly after handling. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. GHS Classification: P310: Immediately call a POISON CENTER or doctor. Ox. Sol. (Category 2) P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Skin Corr. (Category 1B) P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position Aquatic Acute (Category 1) comfortable for breathing Aquatic Chronic (Category 1) P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. GHS Label information: Hazard statement: Remove contact lenses, if present and easy to do. Continue rinsing. H272: May intensify fire; oxidizer. P363: Wash contaminated clothing before reuse. H314: Causes severe skin burns and eye damage P370+P378: In case of fire: Use water to extinguish. H410: Very toxic to aquatic life with long lasting effects. P391: Collect spillage. P405: Store locked up H501: Dispose of contents/container to a licensed chemical disposal agency in accordance with all local, state and federal regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Silver nitrate		7761-88-8	100%	231-853-9	
Section 4	First Aid Measures				

**INGESTION:** MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CONTACT CAUSES CORNEAL DAMAGE OR BLINDNESS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CONTACT CAN CAUSE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon<sup>®</sup> may provide limited control.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is a strong oxidizer which releases oxygen on heating. The oxygen will intensify any fire in the immediate surroundings.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area. Keep away from ignition sources. Store in resistant containers. Do not store in wooden, cardboard or paper containers. Store away from flammable and combustible materials.

Section 8	Exposure Controls / Personal Prot	ection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Silver, soluble compounds, as Ag	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Pro	perties	
Appearance: Solid, white crystals. Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: 212°C (>413°F) Boiling point: Decomposes Flash point: Data not available	Evaporation rate (=1): Not applicable Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): 5.8 Relative density (Specific gravity): 4.35 Solubility(ies): +/- 10% in water	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: 444°C (>831°F) Viscosity: Not applicable Molecular formula: AgNO <sub>3</sub> Molecular weight: 169.87
Section 10 Stability & Reactivity		

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Combustible materials, reducing agents, organic substances, strong basis and alkalis.

Hazardous decomposition products: Nitrogen oxides.

#### Section 11 **Toxicological Information**

Acute toxicity: Oral-rat LD50: 1,173 mg/kg ; Dermal-guinea pig LD50: >216 mg/kg Skin corrosion/irritation: Human - Corrosive Serious eye damage/irritation: Rabbit - Corrosive

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

#### Potential health effects:

Inhalation: Inhalation of dust will produce irritation to gastrointestinal or respiratory tract, characterized by burning, sneezing, and coughing. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Ingestion: Poisonous if swallowed. Ingestion causes severe gastroenteritis.

Skin: Contact with skin can produce inflammation and blistering.

Eyes: Contact with eyes may cause corneal damage or blindness.

Signs and symptoms of exposure: Irritation of upper respiratory tract. Skin irritation or burns. Severe irritation or burns to eyes.

Additional information: RTECS #: VW4725000

Section 12	Ecological Information						
Toxicity to daphnia a Toxicity to algae: Ch Persistence and deg Mobility in soil: No o	orhynchus mykiss (fish, fresh wate <b>nd other aquatic invertebrates:</b> lorella vulgaris (Algae), EC50 = Ca <b>radability:</b> No data available data available <b>s:</b> An environmental hazard canno	Daphnia magn . 0.1 mg/l/14 d Bioaccumul PBT and vP	a (Crustacia), EC50 = ay - growth rate ative potential: No c vB assessment: No	data available data available			
Section 13	Disposal Considerations						
	lelines are intended for the disp different. Dispose of in accorda						
Section 14	Transport Information						
UN/NA number: Hazard class: 5.1 Exceptions: Limi	· · · · · · · · · · · · · · · · · · ·	<b>ıp:</b> II	Reportab	Die Quantity: > 1 G Guide # 140	l lbs (0.454 k	g) <b>Mari</b>	ne pollutant: No
Section 15	Regulatory Information						
A chemical is considered	to be listed if the CAS number for the a	nhydrous form is	s on the Inventory list.				
Compone	nt	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Silver nitrate		Listed	Listed	D001, D011	Listed	Not listed	C ; E

#### Section 16 **Additional Information**

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook

SDS No.: HH0071

Section 1	Chemical Product and Company Information	1
HOME SCI 665 Carbon Stree Billings, MT 591 800-860-6272 www.homescience	102	CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.
Product H	IYDROCHLORIC ACID, 32-36%	
Synonyms M	Iuriatic Acid ; Hydrogen Chloride	
Section 2	Hazards Identification	
GHS Classificat Serious eye dam Skin corr. (Categ STOT SE (Categ GHS Label info H314: Causes su	HS05 / GHS07 Respiratory system, skin, eyes, lungs. tion: mage (Category 1) gory 1B)	<ul> <li>Precautionary statement(s):</li> <li>P260: Do not breathe mist/vapours/spray.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P271: Use only outdoors or in a well-ventilated area.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</li> <li>P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P310: Immediately call a POISON CENTER or doctor/physician.</li> <li>P363: Wash contaminated clothing before reuse.</li> <li>P403/233: Store in a well-ventilated place. Keep container tightly closed.</li> <li>P405: Store locked up.</li> <li>P501: Dispose of contents/container to an approved waste disposal plant.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Water Hydrochloric acid		7732-18-5 7647-01-0	64-68% 32-36%	231-791-2 231-595-7	
Section 4	First Aid Measures	1			

**INGESTION:** Harmful if swallowed. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Causes eye burns. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Causes skin burns. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with metals produce hydrogen, which is flammable and may produce explosive mixtures with air.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Neutralize spill with sodium bicarbonate or calcium hydroxide, absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from physical damage and sunlight. Protect from moisture.

Section 8	Exposure Controls / Personal Protection				
Exposuro Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Limits:	Hydrogen chloride	STEL: C 2 ppm / C 2.98 mg/m <sup>3</sup>	STEL: C 5 ppm / C 7 mg/m <sup>3</sup>	STEL: C 5 ppm / C 7 mg/m <sup>3</sup>	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low. Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

**Physical & Chemical Properties** Section 9 Appearance: Clear, colorless, fuming liquid. Evaporation rate ( = 1): Data not available. Partition coefficient: (n-octanol / water): Data not available. Odor: Pungent odor. Flammability (solid/gas): Data not available. Auto-ignition temperature: Data not available Odor threshold: Data not available. Explosion limits: Upper/Lower: Data not available. Decomposition temperature: Data not available. Vapor pressure (mm Hg): Approx. 25 @ 20°C (68°F) pH: <1.5 acidic, in solution. Viscosity: Data not available. Melting / Freezing point: Approx. -45°C (-49°F) Vapor density (Air = 1): Data not available. Molecular formula: HCI Boiling point: 81.11-85°C (178-185°F) Relative density (Specific gravity): Approx. 1.16 @ 20°C Molecular weight: 36.46 Flash point: Not flammable. Solubility(ies): Soluble in water. **Stability & Reactivity** Section 10 Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Containers may burst when heated. Avoid contact with water. Incompatible materials: Metals, bases, active metals, alkali metals, oxidizing agents, hydroxides, amines, carbonates, cyanides, sulfides, sulfites, formaldehvde. Hazardous decomposition products: Hydrogen chloride gas. Section 11 **Toxicological Information** Acute toxicity: Data not available Skin corrosion/irritation: Skin-rabbit - causes burns. Serious eye damage/irritation: Eyes-rabbit - Corrosive to eyes. Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP. IARC: Group 3: Not classifiable as to its carcinogenicity to humans. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not available STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: May be harmful if inhaled. Material is extrememy destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. Skin: May be harmful if absorbed through skin. Causes skin burns. Eves: Causes eve burns. Signs and symptoms of exposure: Burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Additional information: RTECS #: MW4025000 Section 12 **Ecological Information** Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid) Toxicity to daphnia and other aquatic invertebrates: No data available Toxicity to algae: No data available Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soil: No data available PBT and vPvB assessment: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. **Disposal Considerations** Section 13 These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. Section 14 Transport Information UN/NA number: UN1789 Shipping name: Hydrochloric acid Hazard class: 8 Packing group: || Reportable Quantity: No Marine pollutant: No Exceptions: Limited quantity equal to or less than 1 Lt. Section 15 **Regulatory Information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. WHMIS Classification RCRA code DSL NDSL Component TSCA CERLCA (RQ) Hydrochloric acid Listed Not listed D002 Listed Not listed E; D1A

#### Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

SDS No.: SS0550

#### Section 1 **Chemical Product and Company Information** HOME SCIENCE TOOLS CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 665 Carbon Street Billings, MT 59102 800-860-6272 For laboratory use only. Not for drug, food or household use. www.homesciencetools.com SODIUM HYDROXIDE, ANHYDROUS Product Synonyms Caustic Soda Section 2 **Hazards Identification** Signal word: DANGER Precautionary statement: Pictograms: GHS05 P260: Do not breathe dust Target organs: Respiratory tract, gastrointestinal tract, eyes, skin. P264: Wash hands thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated GHS Classification: clothing. Rinse skin with water/shower. Skin. Corr. (Category 1A) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing GHS Label information: Hazard statement: P310: Immediately call a POISON CENTER or doctor. H314: Causes severe skin burns and eve damage. P363: Wash contaminated clothing before reuse. P405: Store locked up. P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on Ingredients					
Chemical Name		CAS #	%	EINECS		
Sodium hydroxide		1310-73-2	96-100%	215-185-5		
Section 4	First Aid Measures					

**INGESTION:** MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SEVERE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Flood with water, taking care not to splash or scatter. Avoid carbon dioxide as it reacts exothermically with this material.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: Contact with metals can generate hydrogen gas. Contact with water produces intense heat and highly irritating and corrosive mist. Hot or molten material will react violently with water liberating heat and causing splashing. Contact with water may generate sufficient heat to ignite combustible materials.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8	Exposure Controls / Personal Protection				
Exposure Limiter	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Limits:	Sodium hydroxide	STEL: C 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	STEL: C 2 mg/m <sup>3</sup>	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9							
00000000	Physical & Chemical Pr	operties					
Odor: No odor. Odor threshold: 1 pH: 13.0 - 14.0	<b>j point:</b> 318°C (604°F) 90°C (2534°F)	Flammability Explosion lim Vapor pressur Vapor density Relative dens	ate (=1): Not applicat (solid/gas): Data not av its: Lower / Upper: Not re (mm Hg): 1 mm Hg ( (Air = 1): Not applicabl ity (Specific gravity): 2 : 29.6 @ 0°C (32°F) in v	railable. t applicable. D 739°C e. 13 @ 25°C (77°F)	Auto-igniti Decompos Viscosity: Molecular	on temperature:	anol / water): Data not avail Not applicable. e: Data not available.
Section 10	Stability & Reactivity						
	y: Stable bid: Deliquescent material. Abs terials: Metals, acids, organic c	orbs moisture from			sodium carbo	nate.	
Hazardous decon	nposition products: Sodium o	kide. Reacts with	metals to form flammable	e and explosive hyd	rogen gas.		
Section 11	Toxicological Information	'n					
Germ cell mutage Carcinogenity: D NTP: No compone IARC: No compon OSHA: No compon Reproductive tox STOT-single expo	cin sensitization: Data not ava enicity: Data not available Data not available ent of this product present at leve ent of this product present at leve nent of this product present at leve cicity: Data not available osure: Data not available xposure: Data not available	els greater than or els greater than or	equal to 0.1% is identified	ed as probable, pos	sible or confi	rmed human carcin	
Potential health of Inhalation: May be Ingestion: May be Skin: May be harr Eyes: Causes eye Signs and sympt edema, burning se and upper respirat	d: Data not available	auses skin burns. ns. Immation and eder gitis, shortness of	ma of the larynx, spasm,	inflammation and e	dema of the l	pronchi, pneumonit	
Potential health of Inhalation: May be Ingestion: May be Skin: May be harr Eyes: Causes eye Signs and sympt edema, burning se and upper respirat Additional inform Section 12	d: Data not available effects: e harmful if inhaled. Material is e harmful if swallowed. mful if absorbed through skin. Ca a burns. Causes severe eye bur oms of exposure: Spasm, infla ensation, cough, wheezing, laryr tory tract, eyes, and skin. hation: RTECS #: WB4900000 Ecological Information	auses skin burns. ns. Immation and eder gitis, shortness of	ma of the larynx, spasm, breath, headache, nause	inflammation and e	dema of the l	pronchi, pneumonit	
Potential health e Inhalation: May be Ingestion: May be Skin: May be harr Eyes: Causes eye Signs and sympt edema, burning se and upper respirat Additional inform Section 12 Toxicity to fish: L Toxicity to fish: L Toxicity to daphen Toxicity to algae: Persistence and o Mobility in soil: N	d: Data not available effects: e harmful if inhaled. Material is e harmful if swallowed. mful if absorbed through skin. Ca e burns. Causes severe eye burn oms of exposure: Spasm, infla ensation, cough, wheezing, laryr tory tract, eyes, and skin. hation: RTECS #: WB4900000 Ecological Information LC50 - Gambusia affinis (Mosqu lia and other aquatic invertebr No data available degradability: No data availabl No data available fects: An environmental hazard	auses skin burns. Is. Immation and eder gitis, shortness of to fish) - 125 mg/l ates: Immobilization e Bioaccum PBT and v cannot be exclude	ma of the larynx, spasm, breath, headache, nause - 96 h on EC50 - Daphnia - 40.3 pulative potential: No d (PvB assessment: No d	inflammation and e ea, vomiting. Mater 38 mg/l - 48 h ata available data available	idema of the l	pronchi, pneumonit	
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dent determinations of suitability and completeness of information form all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

#### SAFETY DATA SHEET

#### Section 1 Chemical Product and Company Information

#### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

#### CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only.

Not for drug, food or household use.

Product	SULFURIC ACID, CONCENTRATE, 95-98%	
Synonyms	Sulfuric Acid / Hydrogen Sulfate / Battery Acid	
Section 2	Hazards Identification	
Pictograms Target orga GHS Class Skin corr. (C GHS Label	ans: Respiratory system, skin, eyes, teeth.	<ul> <li>Precautionary statement(s):</li> <li>P260: Do not breathe mist/vapours/spray.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</li> <li>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P303: Wash contaminated clothing before reuse.</li> <li>P405: Store locked up.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Sulfuric acid		7664-93-9	95-98%	231-639-5	
Section 4	First Aid Measures		1		
Section 4	FIISLAIU Weasules				

**INGESTION:** Harmful or fatal if swallowed. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Harmful or fatal if inhaled. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Causes severe burns. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Causes severe burns. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Product is a water reactive material, DO NOT USE WATER! Use dry chemicals only for extinguishing.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water on combustibles burning in vicinity of acid but use care as water applied to the acid results in severe generation of heat and may cause boiling and splattering. Sulfuric acid will not burn, but is capable of igniting finely divided combustible materials on contact. May react violently with organic materials and water with the evolution of heat. Contact with reactive metals, e.g. aluminum, may result in the generation of flammable hydrogen gas.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Hygroscopic material. Never add water to this solution, always add acid, slowly and in small amounts to water to avoid splattering.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Limits.	Sulfuric acid	TWA: 0.2 mg/m <sup>3</sup> (A2)	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low. Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

**Physical & Chemical Properties** Section 9 Appearance: Clear, oily liquid. Evaporation rate ( = 1): Data not available. Partition coefficient: (n-octanol / water): Data not available. Odor: Slightly pungent odor. Flammability (solid/gas): Data not available. Auto-ignition temperature: Data not available. Odor threshold: Data not available. Explosion limits: Upper/Lower: Data not available. Decomposition temperature: 340°C (644°F) Vapor pressure (mm Hg): Variable Viscosity: Data not available. pH: <1.5 acidic, in solution. Molecular formula: H<sub>2</sub>SO<sub>4</sub> Melting / Freezing point: <11°C (52°F) Vapor density (Air = 1): Data not available. Boiling point: Approximately 275-325°C (527-617°F) Relative density (Specific gravity): 1.84 Molecular weight: 98.01 Flash point: Not flammable. Solubility(ies): Complete in water. Stability & Reactivity Section 10 Chemical stability: Stable Hazardous polymerization: Will not occur. Conditions to avoid: Avoid contact with water and heat. Avoid temperatures above 250°C (482°F). Incompatible materials: Alkalies, amines, anhydrides, combustibles, organics, oxidizers, powdered metals. Hazardous decomposition products: Sulfur trioxide and/or sulfur dioxide. Hydrogen gas by reaction with metals. Section 11 **Toxicological Information** Acute toxicity: Oral-rat LD50: 2140 mg/kg ; Inhalation-rat LC50: 510 mg/m3/2 hours Skin corrosion/irritation: Skin-rabbit - causes burns Serious eye damage/irritation: Eyes-rabbit - causes burns Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Carcinogenity: Data not available NTP: This product contains a chemical known to be a human carcinogen. IARC classified: Group 1: Carcinogenic to humans. [Acid mists, strong inorganic] OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not available STOT-single exposure: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Inhalation of this material is irritating and/or corrosive to the nose, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath, wheezing, choking, chest pain and impairment of lung function. Inhalation of high concentrations may result in permanent lung damage. Repeated inhalation may cause bronchitis, and also etching of dental enamel followed by the erosion of the enamel and dentine with loss of tooth substance. Ingestion: Ingestion may cause irritation and/or burns to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding and/or tissue ulceration. Skin: Skin contact can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Eyes: Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage. Signs and symptoms of exposure: Burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Additional information: RTECS #: WS5600000 Section 12 **Ecological Information** Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h (sulfuric acid) Toxicity to daphnia and other aquatic invertebrates: Crangon crangon (crustacea) 70-80 mg/l/48 hours Toxicity to algae: No data available Persistence and degradability: No data available Bioaccumulative potential: No data available Mobility in soil: No data available PBT and vPvB assessment: No data available Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. **Disposal Considerations** Section 13 These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency. Section 14 Transport Information UN/NA number: UN1830 Shipping name: Sulfuric acid Hazard class: 8 Packing group: || Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No Exceptions: Limited quantity equal to or less than 1 L 2012 ERG Guide # 137 Section 15 **Regulatory Information** A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list. WHMIS Classification RCRA code DSL NDSL Component TSCA CERLCA (RQ) Sulfuric acid Listed 1000 lbs (454 kg) D002 Listed Not listed E: D1A

#### Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

SDS No.: AA0300

Section 1 Chemical Product and Company Information	
HOME SCIENCE TOOLS 665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com	CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.
Product AMMONIUM NITRATE	
Synonyms Nitric Acid Ammonium Salt	
Section 2 Hazards Identification	
<ul> <li>This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.</li> <li>Signal word: WARNING Pictograms: GHS03 / GHS07 Target organs: Liver, Kidneys, Blood</li> <li>Image: Constraint of the system (Constraint of the system) of the system of the sys</li></ul>	<ul> <li>Precautionary statement(s):</li> <li>P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.</li> <li>P220: Keep away from clothing/incompatible/combustible materials.</li> <li>P221: Take any precaution to avoid mixing with combustibles/acids/oxidizers.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P312: Call a POISON CENTER or doctor if you feel unwell.</li> <li>P302+P352: IF ON SKIN: Wash with plenty of water and soap.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P332+P313: If skin irritation occurs: Get medical attention.</li> <li>P362+P364: Take off contaminated clothing and wash it before reuse.</li> <li>P370+P378: In case of fire: Use water to extinguish.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Ammonium nitrate		6484-52-2	100%	229-347-8	
Section 4	First Aid Measures				

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon<sup>®</sup> may provide limited control. Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool. Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Strong oxidizer. If heated under confinement, material may explode. Ammonium nitrate of any grade, including fertilizer, when contaminated with oil, charcoal or other organic materials should be considered an explosive capable of dentonation by combustion or by explosion of adjacent explosive materials. Combustion by-products include oxides of nitrogen and ammonia. Closed containers may rupture violently when heated.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection			
Exposuro Limite:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	Particulates not otherwise classified/regulated	None established.	TWA: 5 mg/m <sup>3</sup> Respirable fraction	None established.

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9 Physical & Chemical Pro	perties		
Appearance: Hygroscopic solid. White granules Odor: No odor. Odor threshold: Data not available. pH: 5.4 Melting / Freezing point: 169°C (338°F) Boiling point: Decomposes Flash point: Data not available	Evaporation rate (=1): Data not available Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): Data not available Relative density (Specific gravity): 1.73 @ 23°C Solubility(ies): 118 g/100 g water @ 30°C	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: $210^{\circ}C (410^{\circ}F)$ Viscosity: Data not available. Molecular formula: $NH_4NO_3$ Molecular weight: $80.05$	
Section 10 Stability & Reactivity			
Chemical stability: Stable Conditions to avoid: Excessive temperatures and Incompatible materials: Peroxides, strong oxidize	Hazardous polymerization: Will not occur. other sources of ignition. Combustible and organic materials rs, reducing agents, organic materials.		

Hazardous decomposition products: Nitrogen oxides.

#### Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 2217 mg/kg; Inhalation-rat LC50: >88.8 mg/L/4 hours [Ammonium nitrate]

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion: May cause gastroenteritis and abdominal pains. Purging and diuresis can be expected. Rare cases of nitrates being converted to the more toxic nitrites have been reported, mostly with infants.

Skin: Causes irritation to skin. Symptoms include redness, itching, and pain.

Eyes: Causes irritation, redness, and pain.

Signs and symptoms of exposure: Small repeated oral doses of nitrates may cause weakness, depression, headache, and mental impairment. Persons with stomach diseases and infants are much more sensitive to nitrate ion toxicity.

Additional information: RTECS #: BR9050000 [Ammonium nitrate]

#### Section 12 Ecological Information

Toxicity to fish: Cyprinus carpio (Fish, fresh water) LC50: 74 mg/L/48 hours

Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea) EC50: 555 mg/L

Toxicity to algae: Scenedesmus quadricauda (Algae) EC50: 83 mg/L

Persistence and degradability: No data available Bioaccumulative potential: No data available

Mobility in soil: No data available PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14
Transport Information

•							
UN/NA number: UN1942 Hazard class: 5.1 Exceptions: Limited quantity equ	s: 5.1 Packing group: III			No 10	Mari	Marine pollutant: No	
Section 15 Regulatory Inf	ormation						
A chemical is considered to be listed if the CA	AS number for the anhydrous form	is on the Inventory list.					
Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification	
Ammonium nitrate	Listed	Not listed	Not listed	Listed	Not listed	C C	
Section 16 Additional Info	ormation						
The information contained herein is furnished	d without warranty of any kind. Em	ployers should use this ir	nformation only as a su	upplement to othe	er information gathere	ed by them and must make indeper	

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

#### SAFETY DATA SHEET

CORROSIVE STORAGE CODE WHITE

Section 1 Chemical Product and Company Information

#### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com Page E1 of E2

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

Product ACETIC ACID, GLACIAL	
Synonyms Ethanoic Acid / Methanecarboxylic Acid / Glacial Acetic Acid	
Section 2 Hazards Identification	
Signal word: DANGER Pictograms: GH302 / GH305 Target organs: Respiratory system, Eyes, Skin, Teeth	<ul> <li>Precautionary statement:</li> <li>P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.</li> <li>P233: Keep container tightly closed.</li> <li>P241: Use explosion-proof electrical/ventilating/lighting equipment.</li> <li>P242: Use only non-sparking tools.</li> <li>P243: Take precautionary measures against static discharge.</li> <li>P260: Do not breathe mist/vapours/spray.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</li> <li>P363: Wash contaminated clothing before reuse.</li> <li>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</li> <li>P310: Immediately call a POISON CENTER or doctor.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.</li> <li>P403+P235: Store in a well-ventilated place. Keep cool.</li> <li>P405: Store locked up.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Acetic acid		64-19-7	99.8%	200-580-7	
Section 4	First Aid Measures				

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE CORNEAL BURNS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION AND/OR BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This chemical reacts violently with strong oxidizers, generating a fire and explosion hazard. Reacts violently with strong bases, strong acids and many other compounds.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection					
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)		
Exposure Linits.	Acetic acid	TWA: 25 mg/m <sup>3</sup> STEL: 37 mg/m <sup>3</sup>	TWA: 25 mg/m <sup>3</sup>	TWA: 25 mg/m <sup>3</sup> STEL: 37 mg/m <sup>3</sup>		

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.							
Section 9	Physical & Chemical Prop	erties					
Appearance: Clear, Odor: Strong, acrid, Odor threshold: Da pH: <2 Melting / Freezing p Boiling point: 118.1 Flash point: 39°C (1	vinegar-like odor. ta not available. oint: 16.7°C (62°F)	Evaporation rate ( Butyl acetate = 1): 0.97       Partition coefficient: Data not available         Flammability (solid/gas): Data not available.       Partition coefficient: Data not available         Explosion limits: Lower / Upper: 4.0% / 19.9%       Decomposition temperature: 464°C (869°F)         Vapor pressure (mm Hg): 11.4 @ 20°C       Viscosity: Data not available.         Vapor density (Air = 1): 2.07       Molecular formula: CH <sub>3</sub> COOH         Relative density (Specific gravity): 1.049 @ 20/4°C       Molecular weight: 60.05					464°C (869°F) : Data not available.
Section 10	Stability & Reactivity						
Chemical stability: Conditions to avoid	Stable : Excessive temperatures, hea		ous polymerization: V ame and other sources				
	ials: Bases, strong oxidizers, c ehyde and acetic anhydride. Ig				xides, phosph	ates. Corrosive to	some metals. Potentially violent
Hazardous decomp	osition products: Carbon mor	loxide, hydroger	sulfide and other harm	ful gases or vapors	including oxid	les and/or other cor	mpounds of sulfur and sodium.
Section 11	Toxicological Information						
Serious eye damag Respiratory or skin Germ cell mutageni Carcinogenity: Dat NTP: No component IARC: No componen OSHA: No componen Reproductive toxici STOT-single expose STOT-repeated exp STOT-repeated exp Aspiration hazard: Potential health effel Inhalation: Exposure shortness of breath, Ingestion: May caus faintness, weakness, Skin: Contact with si	Acute toxicity: Oral-rat LD50: 3,310 mg/kg ; Inhalation-rat LC50: 11.4 mg/L/4 hours ; Dermal-rabbit LD50: 1,060 mg/kg Skin corrosion/irritation: Skin-rabbit - Severe irritant. Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity: Data not available STOT-single exposure: Data not available STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Exposure to vapor may cause irritation of the eyes, nose, and respiratory tract. May cause asthma-like symptoms, including coughing, wheezing, tightness of chest, shortness of breath, and headache. Ingestion: May cause burns of the mouth, throat, esophagus, and stomach. Signs and symptoms may include pain, nausea, vomiting, diarrhea, dizziness, drowsiness, faintness, weakness, collapse and coma. Skin: Contact with skin cause pain, redness, pums, and blisters. Eyes: Contact with eyes may cause redness, pain, corneal burns, and loss of vision. Signs and symptoms of exposure: See Potential health effects above. Exercise appropriate procedures to minimize potential hazards.						
Section 12	Ecological Information						
Toxicity to fish: Gambusia affinis (fish, fresh water), LC50 = 251 mg/L/24 hours         Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = 95 mg/L/24 hours         Toxicity to algae: Euglena gracilis (Algae), EC100 = 720 mg/L         Persistence and degradability: Easily biodegradable       Bioaccumulative potential: Not expected to bioaccumulate         Mobility in soil: No data available       PBT and vPvB assessment: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.							
Section 13	Disposal Considerations						
	delines are intended for the different. Dispose of in acc <b>Transport Information (U</b>	ordance with a	Il local, state and fede				
UN/NA number:		name: Acetic					
Hazard class: 8,				ble Quantity: 5,0	000 lbs (2270	0 kg) Mari	ine pollutant: No
	ited quantity equal to or less	s than 1 L	2012 ER0	<b>Guide #</b> 132			
Section 15	Regulatory Information	he ophysizer f	a la an tha lauratan Bat				
A chemical is considered Compone	d to be listed if the CAS number for	the anhydrous forn TSCA	certer (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Acetic acid, glacial		Listed	5,000 lbs (2270 kg)	D001, D002	Listed	Not listed	B3; E
. tootto aoia, giaoidi		LISIOU	5,000 100 (2210 Ng)	2001, 2002	LIGIOU	i tot libiou	US
						I	
Section 16	Additional Information						
The information contain	ed herein is furnished without warra	nty of any kind. Er	nployers should use this in	formation only as a su	pplement to oth	er information gathere	ed by them and must make indepen-

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

#### SAFETY DATA SHEET

Section 1 Chemical Product and Company Information	Page E1 of E2
HOME SCIENCE TOOLS 665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com	CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.
Product FERRIC CHLORIDE, HEXAHYDRATE	
Synonyms Iron(III) Chloride, Hexahydrate	
Section 2 Hazards Identification	
Signal word: DANGER Pictograms: GHS05 / GHS07 Target organs: Eyes, Skin, Respiratory system, Liver, Gastrointestinal tract	<ul> <li>Precautionary statement:</li> <li>P234: Keep only in original container.</li> <li>P406: Store in corrosive resistant container with a resistant inner liner.</li> <li>P264: Wash hands thoroughly after handling.</li> <li>P270: Do not eat, drink or smoke when using this product.</li> <li>P280: Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.</li> <li>P302+P352: IF ON SKIN: Wash with plenty of water and soap.</li> <li>P332+P313: If skin irritation occurs: Get medical attention.</li> <li>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.</li> <li>Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P310: Immediately call a POISON CENTER or doctor.</li> <li>P362+P364: Take off contaminated clothing and wash it before reuse.</li> <li>P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.</li> </ul>

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3	Composition / Information on	Ingredients		
Chemical Name		CAS #	%	EINECS
Ferric chloride, hexa	ahydrate	10025-77-1	100%	231-729-4 [anhydrous]
Section 4	First Aid Measures			

**INGESTION:** HARMFUL IF SWALLOWED. MAY CAUSE LIVER OR KIDNEYS DAMAGE. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Do NOT use water! Dry chemicals, CO2 or other agents as appropriate for surrounding fires.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. May release toxic fumes of Hydrogen chloride gas in a fire.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts or vapors. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources. Avoid contact with humid or wet areas. Keep away from metals.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Linits.	Iron salts, soluble, as Fe	TWA: 1 mg/m <sup>3</sup>	No listing	TWA: 1 mg/m <sup>3</sup>	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

inflammation and pulmonary edema.       Ingestion: May cause severe livit or kidneys damage. May also cause gastrointestinal damage.         Skin: May cause severe livitation, tearing, blurred vision, burns, severe damage, and permanent blindness.         Signs and symptoms of exposure: See Potential health effects above. Exercise appropriate procedures to minimize potential hazards.         Additional information: RTECS #: Ll9100000 (Anhydrous)         Section 12       Ecological Information         Toxicity to fish: No data available       Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available       Bioaccumulative potential: No data available         Persistence and degradability: No data available       Bioaccumulative potential: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.       Section 13         Disposal Considerations       Transport Information (US DOT / CANADA TDG)         UNNA number: UN1759       Shiping name: Corrosive solids, n.o.s., (Ferric chloride, hexahydrate)         Hazard class: 8       Packing group: III       Reportable Quantity: 1,000 lbs (454 kg)       Marine pollutant: No         Exceptions: Limited quantity equal to or less than 5 Kg       2012 ERG Guide # 154       Section 15       Marine pollutant: No         Exceptions: Limited quantity equal to or less than 5 Kg       2012 ERG Guide # 154       Section 16 <td< th=""><th>approved respirator</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	approved respirator								
Order Hydrochloric add dot:	Section 9	Physical & Chemical Prop	erties						
Chemical stability:       Stable       Hazdrous polymerization:       Will not occur.         Conditions to avoid:       Excessive temparatures, heat, water, polasium, sodium, incompatible materials.         Incompatible materials:       Valer, organizations, enduring agents, materials, stora bases, reducing agents, materials.         Standard Construction:       Toxicological Information         Acute toxicity:       Constructions available         Service seve damage/infrator:       Data not available         Gernicegints:       Data not available         Gernicegints:       Data not available         Gernicegints:       Data not available         Recretoring:       Data not available         String exposure:       Data not available         String e	Odor: Hydrochloric Odor threshold: D pH: 2 (0.1M solutio Melting / Freezing Boiling point: Data	ic acid odor. Data not available. Data not available. point: 37°C (99°F) tata not available Relative density (Specific gravity): Data not available Relative density (Specific gravity): Data not available Napor pressure (mm Hg): Data not available Napor density (Specific gravity): Data not available Relative density (Specific gravity): Data not available Napor density (Specific gravity): Data not available							
Conditions to avoid: Excessive temperatures, heat, water, potassium, sodium, incompatible materials. Incompatible materials: Water, outdoing agents, males, strong bases, reducing agents, alcohols. Hazardous decomposition products: Hydrogen gas on contact with metals. Socient 1 Toxicological Information Acute toxicity: Oral-rat LD50: 1,872 mg/kg Skin corroson/infitation: Date not available Represent on the analysis of the	Section 10	Stability & Reactivity				1			
Acute toxicity:       Charlar LDS: 0.1872 mg/kg         Skin corrosion/irritation:       Data not available         Services seed damage/irritation:       Data not available         Carcinogenity:       Data not available         STOT-single sequences       Stot not available         STOT-single sequences       Data not available         STOT-single sequences       Stot not available         Potential health effects:       Inflammation and pulmonary edema.         Inflammation and pulmonary edema.       Data available         Stotic to fast available       Data available         Stotic to fast available       Data available         Stotic to fast available       PBT and VPVB assessesmene: No data available         Toxici	Conditions to avoid Incompatible mate	<b>d:</b> Excessive temperatures, heat, <b>rials:</b> Water, oxidizing agents, m	, water, potassiu etals, strong ba	um, sodium, incompatibl ses, reducing agents, al	e materials.				
Acute toxicity:       Orderat LD50: 1.872 mg/kg         Skin corrosion/fritation:       Data not available         Serious eyed amage/initiation:       Data not available         Carcinogenity:       Data not available         STOT-single exposure:       Data not available         Stort inflammation and pulmonary edema.       Inflammation and pulmonary edema.         Inflammation and pulmonary edema.       Data available         Stort inflammation:       RECS & LelP100000 (Aninydrous)         Stort of thi	Section 11	Toxicological Information							
Toxicity to fish: No data available         Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available         Persistence and degradability: No data available         PBT and vPvB assessment: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal Considerations         These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or locc regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.         Section 14       Transport Information (US DOT / CANADA TDG)         UN/NA number:       UN/T59         Shipping name:       Corrosive solids, n.o.s., (Ferric chloride, hexahydrate)         Hazard class: 8       Packing group: III         Reportable Quantity: 1,000 lbs (454 kg)       Marine pollutant: No         Exceptions:       Limited quantity equal to or less than 5 Kg       2012 ERG Guide # 154         Section 15       Regulatory Information         A chemical is considered to be listed if the CAS number for the enhydrous form is on the Inventory list.       Marine pollutant: No         Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       WH	Respiratory or skin sensitization: Data not available         Germ cell mutagenicity: Data not available         Carcinogenity: Data not available         NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.         IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.         OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.         Reproductive toxicity: Data not available         STOT-single exposure: Data not available         STOT-repeated exposure: Data not available         Potential health effects:         Inhalation: Dust or vapors may be corrosive or irritating to the nose, throat and respiratory tract. Symptoms may include burning sensation, coughing, shortness of breath, lung inflammation and pulmonary edema.         Ingestion: May cause severe liver or kidneys damage. May also cause gastrointestinal damage.         Skin: May cause severe irritation, tearing, blurred vision, burns, severe damage, and permanent blindness.								
Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available         Persistence and degradability: No data available       Bioaccumulative potential: No data available         Mobility in soil: No data available       PBT and vPvB assessment: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.         Section 13       Disposal Considerations         These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.         Section 14       Transport Information (US DOT / CANADA TDG)         UN/NA number:       UN1759         Shipping name:       Corrosive solids, n.o.s., (Ferric chloride, hexahydrate)         Hazard class: 8       Packing group: III         Reportable Quantity: 1,000 lbs (454 kg)       Marine pollutant: No         Exceptions:       Limited quantity equal to or less than 5 kg         2012 ERG Guide # 154       A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.         Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       WHMIS Classification         Ferric chloride, anhydro	Section 12	Ecological Information							
regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.         Section 14 Transport Information (US DOT / CANADA TDG)         UN/NA number:       UN1759       Shipping name:       Corrosive solids, n.o.s., (Ferric chloride, hexahydrate)         Hazard class:       8       Packing group:       III       Reportable Quantity:       1,000 lbs (454 kg)       Marine pollutant:       No         Exceptions:       Limited quantity equal to or less than 5 Kg       2012 ERG Guide #       154         Section 15       Regulatory Information         A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.       Vertical (Component)       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       WHMIS Classification         Ferric chloride, anhydrous       Listed       1,000 lbs (454 kg)       Not listed       Listed       Not listed       E	Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         Other adverse effects: An environmental hazard cambox    Bioaccumulative potential: No data available Bioaccumulative potent								
UN/NA number:       UN1759       Shipping name:       Corrosive solids, n.o.s., (Ferric chloride, hexahydrate)         Hazard class:       8       Packing group:       III       Reportable Quantity:       1,000 lbs (454 kg)       Marine pollutant:       No         Exceptions:       Limited quantity equal to or less than 5 Kg       2012 ERG Guide #       154         Section 15       Regulatory Information         A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.         Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       WHMIS Classification         Ferric chloride, anhydrous       Listed       1,000 lbs (454 kg)       Not listed       Listed       Not listed       E	regulations may b	e different. Dispose of in acco	ordance with a	Il local, state and fede	ily. Federal regul ral regulations or	lations may a contract with	apply to empty co a licensed chen	ntainer. State and/ nical disposal agen	or local cy.
Hazard class:       8       Packing group:       III       Reportable Quantity:       1,000 lbs (454 kg)       Marine pollutant:       No         Exceptions:       Limited quantity equal to or less than 5 Kg       2012 ERG Guide # 154       Section 15       Regulatory Information         A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.       Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       WHMIS Classification         Ferric chloride, anhydrous       Listed       1,000 lbs (454 kg)       Not listed       Listed       Not listed       E				,	arric chlorida ho	vahvdrate)			
Section 15       Regulatory Information         A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.         Component       TSCA       CERLCA (RQ)       RCRA code       DSL       NDSL       WHMIS Classification         Ferric chloride, anhydrous       Listed       1,000 lbs (454 kg)       Not listed       Listed       Not listed       E	Hazard class: 8	Packing g	roup: III	Reportat	le Quantity: 1,	<b>,</b>	kg) Mar	ine pollutant: No	)
ComponentTSCACERLCA (RQ)RCRA codeDSLNDSLWHMIS ClassificationFerric chloride, anhydrousListed1,000 lbs (454 kg)Not listedListedNot listedE									
Ferric chloride, anhydrous     Listed     1,000 lbs (454 kg)     Not listed     Listed     Not listed									
	Compor	ient	TSCA			DSL	NDSL	WHMIS Classi	fication
Section 16 Additional Information	Ferric chloride, anh	ydrous	Listed	1,000 lbs (454 kg)	Not listed	Listed	Not listed	0	) E
	Section 16	Additional Information							

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook

#### SAFETY DATA SHEET

Section 1 Chemical Product and Company Information

#### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

#### Page E1 of E2

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300 For laboratory use only. Not for drug, food or household use.

POTASSIUM CHROMATE Product Synonyms Dipotassium Chromate / Neutral Potassium Chromate Section 2 **Hazards Identification** Signal word: DANGER Precautionary statement: Pictograms: GHS07 / GHS08 / GHS09 P201: Obtain special instructions before use Target organs: Respiratory system, Liver, Kidneys, Blood P202: Do not handle until all safety precautions have been read and understood. P261: Avoid breathing dust. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P272: Contaminated work clothing should not be allowed out of the workplace. P273: Avoid release to the environment. **GHS Classification:** P280: Wear protective gloves/protective clothing/eye protection/face protection. Skin irritation (Category 2) P302+P352: IF ON SKIN: Wash with plenty of water and soap. Skin sensitization (Category 1) P333+P313: If skin irritation or rash occurs: Get medical attention. Eye irritation (Category 2) P362+P364: Take off contaminated clothing and wash it before reuse. STOT-SE (Category 3) P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Mutagenicity (Category 1B) Remove contact lenses, if present and easy to do. Continue rinsing. Carcinogenicity (Category 1B) P337+P313: If eve irritation persists: Get medical attention. Aquatic toxicity, acute (Category 1) P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for Aquatic toxicity, chronic (Category 1) breathing P312: Call a POISON CENTER or doctor if you feel unwell. GHS Label information: Hazard statement: P391: Collect spillage H315: Causes skin irritation. P403+P233: Store in a well-ventilated place. Keep container tightly closed. H317: May cause an allergic skin reaction. P405: Store locked up H319: Causes serious eye irritation. P501: Dispose of contents/container to a licensed chemical disposal agency in H335: May cause respiratory irritation. accordance with local/regional/national regulations. H340: May cause genetic defects. H350: May cause cancer. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long lasting effects.

Ca Prop 65: This chemical is known to the State of California to cause cancer or reproductive toxicity. (Chromium [hexavalent compounds])

Section 3 Composition / Information of	n Ingredients			
Chemical Name	CAS #	%	EINECS	
Potassium chromate	7789-00-6	100%	232-140-5	
Section 4 First Aid Measures				

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION. MAY CAUSE AN ALLERGIC SKIN REACTION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon<sup>®</sup> may provide limited control.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Protection				
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)	
Exposure Limits.	Chromium(VI) inorganic compounds	TWA: 0.05 mg/m <sup>3</sup> (A1) as Cr	TWA: 0.005 mg/m <sup>3</sup> as Cr(VI)	TWA: 0.001 mg/m <sup>3</sup> as Cr	

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

approved respirator.							
Section 9 Physical & Chemical Pro	perties						
Appearance:Solid. Yellow crystalsEvaporation rate (=1):Data not availablePartition coefficient:Data not availableOdor:No odorFlammability (solid/gas):Data not availableAuto-ignition temperature:Data not availableOdor threshold:Data not availableExplosion limits:Lower / Upper:Data not availableDecomposition temperature:Data not availableOdor threshold:Data not availableVapor pressure (mm Hg):Data not availableViscosity:Data not availableWelting / Freezing point:95°C (1787°F)Vapor density (Air = 1):Data not availableMolecular formula:K2CrO4Boiling point:Data not availableSolubility(ies):Solubile in waterMolecular weight:194.21							
Section 10 Stability & Reactivity				1			
Chemical stability: Stable Conditions to avoid: Excessive temperatures, hea		us polymerization: \ ame and other sources					
Incompatible materials: Reducing agents. Most c rials.	rganic substance	s, bromides, iodides, c	hlorides, hypophosp	hites, sulfites,	sulfides. Combus	tible materials, oxidizable mate-	
Hazardous decomposition products: Potassium	oxides.						
Section 11 Toxicological Information	I						
Acute toxicity: Oral-mouse LD50: 180 mg/kg Skin corrosion/irritation: Data not available Respiratory or skin sensitization: Data not available Germ cell mutagenicity: Data not available Germ cell mutagenicity: Data not available NTP: Known to be a human carcinogen. IARC classified: Group 1: Carcinogenic to humans. OSHA: Data not available Car Prop 65: This chemical is known to the State of California to cause cancer or reproductive toxicity. (Chromium [hexavalent compounds]) Reproductive toxicity: Data not available STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory effects. STOT-repeated exposure: Data not available Aspiration hazard: Data not available Potential health effects: Inhalation: Inhalation may cause burning sensation, sore throat, cough, wheezing, labored breathing. Ingestion: lingestion causes available. Skin: Causes skin irritation. May cause an allergic skin reaction. Eyes: Contact with eyes may cause serious irritation. Signs and symptoms of exposure: Risk of cancer depends on level and duration of exposure. Chromium compounds in the form of chromates and dichromates have been found to be mutagenic in bacterial and mammalian cells, including those of the Chinese hamster. Recent studies indicate a significant risk of lung cancer among long-term employees of the chromate producing industry. Exercise appropriate procedures to minimize potential hazards. Additional information: RTECS #: GB2940000							
Section 12 Ecological Information							
Toxicity to fish: No data available         Toxicity to daphnia and other aquatic invertebrates: No data available         Toxicity to algae: No data available         Persistence and degradability: No data available         Mobility in soil: No data available         PBT and vPvB assessment: No data available         Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.							
Section 13 Disposal Considerations							
These disposal guidelines are intended for the regulations may be different. Dispose of in acc	ordance with all	local, state and fed					
Section 14 Transport Information (U		•					
UN/NA number:       UN3086       Shipping name:       Toxic solid, oxidizing, n.o.s., (Potassium chromate)         Hazard class:       6.1, (5.1)       Packing group:       II       Reportable Quantity:       Yes       Marine pollutant:       No         Exceptions:       No exceptions       2012 ERG Guide #       141       No							
Section 15 Regulatory Information							
A chemical is considered to be listed if the CAS number for	the anhydrous form	is on the Inventory list.					
Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification	
Potassium chromate	Listed	10 lbs (4.54 kg)	D001, D007	Listed	Not listed	C ; D2A ; D2B	

#### Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.



Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 12/15/2014 Revision date: 12/15/2014 Version: 1.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	
Product form	: Substance
CAS No	: 7439-95-4
Formula	: Mg
Synonyms	: Magnesium / magnesium, borings / magnesium, metal / magnesium, ribbons / magnesium, scalpings / magnesium, sheet / magnesium, turnings
BIG no	: 10761
1.2. Relevant identified uses of the subs	tance or mixture and uses advised against
Use of the substance/mixture	: Laboratory chemicals
1.3. Details of the supplier of the safety	data sheet
CCC International Inc	

GSC International, Inc. 1747 N. Deffer Drive Nixa, MO 65714 United States of America

Tel: 417-374-7431 Fax: 417-374-7442 Email: info@gscinternationalinc.com

#### 1.4. Emergency telephone number

Country	Organization/Company	Address	Emergency number
MEXICO	Servicio de Informacion Toxicologica Sintox	Tintoreto #32 Edif. a Desp. Col. Nochebuena Mixcoac México, D.F.	1 800 009 2800 +52 55 5611 2634 /+52 55 5598 9095
UNITED STATES OF AMERICA	American Association of Poison Control Centers		1-800-222-1222

#### **SECTION 2: Hazards identification**

2.1. Classification of the substance or mixture

#### **Classification (GHS-US)**

Flam. Sol. 1 H228 Self-heat. 1 H251 Water-react. 2 H261

Full text of H-phrases: see section 16

#### 2.2. Label elements

#### **GHS-US** labeling

Hazard pictograms (GHS-US)

Signal word (GHS-US) Hazard statements (GHS-US)

Precautionary statements (GHS-US)



#### : Danger

H228 - Flammable solid

- H251 Self-heating: may catch fire
- H261 In contact with water releases flammable gases
- : P210 Keep away from heat, hot surfaces, open flames, sparks. No smoking P223 - Do not allow contact with water
  - P231+P232 Handle under inert gas. Protect from moisture
  - P235+P410 Keep cool. Protect from sunlight
  - P280 Wear eye protection, face protection, protective clothing, protective gloves P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages

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P370+P378 - In case of fire: Use dry extinguishing powder, dry sand to extinguish P402+P404 - Store in a dry place. Store in a closed container P420 - Store away from other materials P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

#### SECTION 3: Composition/information on ingredients

3.1. Substance				
Name		Product identifier	%	Classification (GHS-US)
Magnesium (Main constituent)		(CAS No) 7439-95-4	> 99,9	Flam. Sol. 1, H228 Self-heat. 1, H251 Water-react. 2, H261
Full text of H-phrases: see section 16				
3.2. Mixture				
Not applicable				
4.1. Description of first aid measures				
First-aid measures general		u feel unwell, seek medical advice. Neve son. If you feel unwell, seek medical advic		
First-aid measures after inhalation		nove person to fresh air and keep comfor Allow the victim to rest.	table for breath	ing. Allow victim to breathe fresh
First-aid measures after skin contact	by v ban	nove affected clothing and wash all expose varm water rinse. Brush off loose particles dages. Brush off loose particles from skin sh skin with plenty of water.	s from skin. Imr	nerse in cool water/wrap in wet
First-aid measures after eye contact	irrita	se with water. Do not apply (chemical) ne ition persists. Rinse immediately with plei king or redness persist. Rinse eyes with v	nty of water. Ot	otain medical attention if pain,
First-aid measures after ingestion	adv	se mouth out with water. Consult a doctor ce/attention. Rinse mouth. Do NOT induc a poison center/doctor/physician if you fe	ce vomiting. Ob	
4.2. Most important symptoms and effect	ts, both	acute and delayed		
Symptoms/injuries	: Not	expected to present a significant hazard	under anticipate	ed conditions of normal use.
Symptoms/injuries after inhalation	: AFT	ER INHALATION OF FUME: Metal fume	fever.	
Chronic symptoms	Infla	CONTINUOUS/REPEATED EXPOSURE mmation/damage of the eye tissue. Poss ghing.		

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures	
5.1. Extinguishing media	
Suitable extinguishing media	: Dry sand. Dry powder.
Unsuitable extinguishing media	: Water. Water spray. Foam. Carbon dioxide. Do not use a heavy water stream.
5.2. Special hazards arising from the sub	ostance or mixture
Fire hazard	: DIRECT FIRE HAZARD. May readily catch fire. Combustibility increases as material becomes thinner. In finely divided state: increased fire hazard. Spontaneously flammable in air. INDIRECT FIRE HAZARD. Heating increases the fire hazard. Reactions involving a fire hazard: see "Reactivity Hazard". Flammable solid. Self-heating: may catch fire.
Explosion hazard	: DIRECT EXPLOSION HAZARD. Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD. Dust cloud can be ignited by a spark. Reactions with explosion hazards: see "Reactivity Hazard". May form flammable/explosive vapor-air mixture.

Magnesium Ribbon Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Reactivity	: Reacts slowly with water (moisture): release of highly flammable gases/vapours (hydrogen). This reaction is accelerated on exposure to (strong) acids. Burning substance reacts explosively with water. Reacts violently with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: release of highly flammable gases/vapours (hydrogen). Flammable solid. Self-heating: may catch fire.
5.3. Advice for firefighters	
Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to heat: have neighborhood close doors and windows.
Firefighting instructions	: When cooling/extinguishing: no water in the substance. If no hazard for/from the surroundings: controlled burning. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus. Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
SECTION 6: Accidental release meas	ures
6.1. Personal precautions, protective equ	ipment and emergency procedures
General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
6.1.1. For non-emergency personnel	
Protective equipment	: Gloves. Protective clothing. See "Material-Handling" to select protective clothing.
Emergency procedures	: Mark the danger area. No naked flames. Keep containers closed. Avoid ingress of water in the containers. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation. Evacuate unnecessary personnel.
6.1.2. For emergency responders	
Protective equipment	: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Ventilate area.
6.2. Environmental precautions	
Avoid release to the environment. Prevent spread public waters.	ing in sewers. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or

6.3.	Methods and material for containment	nt and cleaning up
For conta	ainment	: Contain leaking substance, pump over in suitable containers. Consult "Material-handling" to select material of containers. Provide equipment/receptacles with earthing. Contact with water: measure explosive gas-air mixture concentration. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapor with water curtain.
Methods	for cleaning up	: Recover mechanically the product. Collect the spill only if it is in a dry state in closing drums. Consult "Material-handling" to select material of containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. Notify authorities if product enters sewers or public waters.
Other info	ormation	: Dispose of materials or solid residues at an authorized site.
6.4.	Reference to other sections	
See Hea	ding 8. Exposure controls and personal p	protection. For further information refer to section 13.

SECTI	ON 7: Handling and storage	
7.1.	Precautions for safe handling	
Additiona	I hazards when processed	<ul> <li>Handle empty containers with care because residual vapors are flammable. Keep away from any possible contact with water, because of violent reaction and possible flash fire.</li> </ul>

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Precautions for safe handling	:	Ensure good ventilation of the work station. Meet the legal requirements. Wash contaminated clothing before reuse. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Use earthed equipment. Keep away from naked flames/heat. Avoid contact of substance with water. Finely divided: spark- and explosion proof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tight closed. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Handle under inert gas. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Wear personal protective equipment. Protect from moisture. Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Hygiene measures	:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
7.2. Conditions for safe storage, includin	ng a	any incompatibilities
Technical measures	:	Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Maintain air gap between stacks/pallets. Use explosion-proof Flame proof, lighting, electrical equipment and ventilation equipment.
Storage conditions	:	Keep container closed when not in use. Heat sources. Direct sunlight. Keep in fireproof place. Store in a dry place. Protect from moisture. Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat-ignition. Keep cool. Protect from sunlight. Keep away from ignition sources. Store away from other materials. Store in a closed container. Store in a well-ventilated place.
Incompatible products	:	Strong bases. Strong acids.
Incompatible materials	:	Sources of ignition. Direct sunlight. Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Heat-ignition	:	KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	:	KEEP SUBSTANCE AWAY FROM: oxidizing agents. Strong acids. Flammable materials. halogens. moisture.
Storage area	:	Store in a dry area. Keep container in a well-ventilated place. Store at ambient temperature. Fireproof storeroom. Provide the tank with earthing. Meet the legal requirements.
Special rules on packaging	:	SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labeled. meet the legal requirements. Secure fragile packaging in solid containers. Store in a closed container.

#### 7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection		
8.1. Control p	parameters	
Magnesium Ribb	oon (7439-95-4)	
ACGIH	Not applicable	
OSHA	Not applicable	

8.2.	<b>Exposure</b>	oontrolo
0.2.	Exposure	CONTROLS

Materials for protective clothing

Environmental exposure controls

Skin and body protection

Respiratory protection

Other information

Hand protection

Eye protection

Appropriate engineering controls Personal protective equipment

- : Provide adequate general and local exhaust ventilation. Ensure good ventilation of the work station.
- : Protective clothing. Protective goggles. Gloves.



- : GIVE GOOD RESISTANCE: leather.
  - : Gloves. Wear protective gloves.
- : Chemical goggles or safety glasses. Safety glasses.
- : Protective clothing.
- : Respiratory protection not required in normal conditions. Wear appropriate mask.
- : Avoid release to the environment.
- : Do not eat, drink or smoke during use.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 9: Physical and chemical	properties
9.1. Information on basic physical and	chemical properties
Physical state	: Solid
Appearance	: Metal.
Molecular mass	: 24,31 g/mol
Color	: Silvery-white
Odor	: Odorless
Odor threshold	: No data available
рН	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 650 °C
Freezing point	: No data available
Boiling point	: 1107 °C
Flash point	: No data available
Auto-ignition temperature	: 620 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0,1 hPa
Relative vapor density at 20 °C	: No data available
Relative density	: 1,7
Specific gravity / density	: 1738 kg/m³
Solubility	: insoluble in water. Substance sinks in water. Soluble in mineral acids.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available
9.2. Other information	
VOC content	: 0%

#### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Reacts slowly with water (moisture): release of highly flammable gases/vapours (hydrogen). This reaction is accelerated on exposure to (strong) acids. Burning substance reacts explosively with water. Reacts violently with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: release of highly flammable gases/vapours (hydrogen). Flammable solid. Self-heating: may catch fire.

#### 10.2. Chemical stability

Unstable on exposure to moisture. Flammable solid. May form flammable/explosive vapor-air mixture. Self-heating: may catch fire.

## 10.3. Possibility of hazardous reactions

## In contact with water releases flammable gases.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition. Water, humidity.

#### 10.5. Incompatible materials

#### Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## **SECTION 11: Toxicological information**

#### Information on toxicological effects 11.1.

Acute toxicity	: Not classified
	(Based on available data, the classification criteria are not met)
Magnesium Ribbon ( \f )7439-95-4	
LD50 oral rat	> 2000 mg/kg (Rat)
Skin corrosion/irritation	: Not classified
	(Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified
	(Based on available data, the classification criteria are not met)
Respiratory or skin sensitization	: Not classified
	(Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified
	(Based on available data, the classification criteria are not met)Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
	(Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified
	(Based on available data, the classification criteria are not met)Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
	(Based on available data, the classification criteria are not met)
Specific target organ toxicity (repeated	: Not classified
exposure)	(Based on available data, the classification criteria are not met)
Aspiration hazard	Not classified
	(Based on available data, the classification criteria are not met)
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: AFTER INHALATION OF FUME: Metal fume fever.
Chronic symptoms	<ul> <li>ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Gastrointestinal complaints. Inflammation/damage of the eye tissue. Possible inflammation of the respiratory tract. Coughing.</li> </ul>

SECTION 12: Ecological information	
12.1. Toxicity	
Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: No water pollutant (surface water). Not harmful to aquatic organisms.

#### 12.2. Persistence and degradability

Magnesium Ribbon (7439-95-4)	
Persistence and degradability	Biodegradability: Not applicable. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
12.3. Bioaccumulative potential	
Magnesium Ribbon (7439-95-4)	
Bioaccumulative potential	Not established.

# Magnesium Ribbon Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.4. Mobility in soil	
No additional information available	
12.5. Other adverse effects	
Effect on ozone layer	:
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideration	S
13.1. Waste treatment methods	
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Reuse or recycle following decontamination. Remove for physico-chemical/biological treatment. Remove to an authorized dump (Class I). Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a licensed waste centre in accordance with local/regional/national/international regulations.
Additional information	: LWCA (the Netherlands): KGA category 06. Can be considered as non hazardous waste according to Directive 2008/98/EC.
Ecology - waste materials	: Avoid release to the environment.
SECTION 14: Transport information	
In accordance with DOT	
Transport document description	: UN1869 Magnesium, 4.1, III
UN-No.(DOT)	: UN1869
Proper Shipping Name (DOT)	: Magnesium
Department of Transportation (DOT) Hazard Classes	: 4.1 - Class 4.1 - Flammable Solid 49 CFR 173.124
Hazard labels (DOT)	: 4.1 - Flammable solid
Packing group (DOT)	: III - Minor Danger
DOT Special Provisions (49 CFR 172.102)	<ul> <li>A1 - Single packaging are not permitted on passenger aircraft. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. T1 - 1.5 178.274(d)(2) Normal</li></ul>
DOT Packaging Exceptions (49 CFR 173.xxx)	: 151
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 213
DOT Packaging Bulk (49 CFR 173.xxx)	: 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 25 Kg
	EN (English LIS) 7/0

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Quantity Limitations Cargo aircraft only (49	
	: 100 kg
CFR 175.75) DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a
DOT Vessel Stowage Other	<ul> <li>passenger vessel.</li> <li>39 - Stow "away from" liquid halogenated hydrocarbons,52 - Stow "separated from" acids,53 - Stow "separated from" alkaline compounds,74 - Stow "separated from" oxidizers,101 - Stow "separated from" iron oxide</li> </ul>
Additional information	
Other information	: No supplementary information available.
ADR	
Transport document description	: UN 1869 MAGNESIUM, 4.1, III, (E)
Packing group (ADR)	: 111
Class (ADR)	: 4.1 - Flammable solids, self-reactive substance and solid desensitized explosives
Hazard identification number (Kemler No.)	: 40
Classification code (ADR)	: F3
Hazard labels (ADR)	: 4.1 - Flammable solid
Orange plates	
	1869
Funnel restriction code (ADR)	1009 : E
LQ	: E
-Q Excepted quantities (ADR)	: E : 5kg
LQ Excepted quantities (ADR) Fransport by sea	: E : 5kg
LQ Excepted quantities (ADR) Transport by sea JN-No. (IMDG)	: E : 5kg : E1
LQ Excepted quantities (ADR) Transport by sea UN-No. (IMDG) Proper Shipping Name (IMDG)	: E : 5kg : E1
Tunnel restriction code (ADR) LQ Excepted quantities (ADR) <b>Transport by sea</b> UN-No. (IMDG) Proper Shipping Name (IMDG) Class (IMDG) Packing group (IMDG)	<ul> <li>E</li> <li>5kg</li> <li>E1</li> <li>1869</li> <li>MAGNESIUM</li> </ul>
LQ Excepted quantities (ADR) Transport by sea UN-No. (IMDG) Proper Shipping Name (IMDG) Class (IMDG) Packing group (IMDG)	<ul> <li>E</li> <li>5kg</li> <li>E1</li> <li>1869</li> <li>MAGNESIUM</li> <li>4.1 - Flammable solids, self-reactive substance and solid desensitized explosives</li> </ul>
LQ Excepted quantities (ADR) Transport by sea JN-No. (IMDG) Proper Shipping Name (IMDG) Class (IMDG) Packing group (IMDG) Air transport	<ul> <li>E</li> <li>5kg</li> <li>E1</li> <li>1869</li> <li>MAGNESIUM</li> <li>4.1 - Flammable solids, self-reactive substance and solid desensitized explosives</li> </ul>
LQ Excepted quantities (ADR) Transport by sea UN-No. (IMDG) Proper Shipping Name (IMDG) Class (IMDG) Packing group (IMDG) Air transport UN-No.(IATA)	<ul> <li>E</li> <li>5kg</li> <li>E1</li> <li>1869</li> <li>MAGNESIUM</li> <li>4.1 - Flammable solids, self-reactive substance and solid desensitized explosives</li> <li>III - substances presenting low danger</li> </ul>
LQ Excepted quantities (ADR) Transport by sea UN-No. (IMDG) Proper Shipping Name (IMDG) Class (IMDG)	<ul> <li>E</li> <li>5kg</li> <li>E1</li> <li>1869</li> <li>MAGNESIUM</li> <li>4.1 - Flammable solids, self-reactive substance and solid desensitized explosives</li> <li>III - substances presenting low danger</li> <li>1869</li> </ul>

#### 15.1. US Federal regulations

Magnesium Ribbon (7439-95-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

CANADA

No additional information available

#### **EU-Regulations**

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP] Flam. Sol. 1 H228 Water-react. 2 H261

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Self-heat. 1 H251 Full text of H-phrases: see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11 F; R15 Full text of R-phrases: see section 16

15.2.2. National regulations

#### 15.3. US State regulations

No additional information available

SECTION 16: Other information	
Revision date	: 12/15/2014
Data sources	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

: None.

#### Full text of H-phrases:

Flam. Sol. 1 Self-beat 1	Flammable solids Category 1
Self-heat 1	
Self-heat. 1         Self-heating substances and mixtures Category 1	
Water-react. 2	Substances and mixtures which in contact with water emit flammable gases Category 2
H228	Flammable solid
H251	Self-heating: may catch fire
H261	In contact with water releases flammable gases
nealth hazard	: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
ire hazard	: 1 - Must be preheated before ignition can occur.
eactivity	<ul> <li>1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.</li> </ul>
specific hazard	: W - Unusual reactivity with water. This indicates a potential hazard using water to fight a fire involving this material. When a compound is both water-reactive and an oxidizer, the W/bar symbol should go in this quadrant and the OX warning is placed immediately below the NFPA diamond.
I Rating	
	: 0 Minimal Hazard - No significant risk to health
ability	: 1 Slight Hazard
al	: 1 Slight Hazard
al Protection	: C
	H251 H261 Haalth hazard Fre hazard eactivity pecific hazard I Rating Ability

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SDS No.: PP0160

Section 1 Chemical Product and Company Information

1% PHENOLPHTHALEIN IN ISOPROPYL ALCOHOL SOLUTION

#### HOME SCIENCE TOOLS

665 Carbon Street Billings, MT 59102 800-860-6272 www.homesciencetools.com

Product

## CHEMTREC 24 Hour Emergency

Phone Number (800) 424-9300 For laboratory use only.

Not for drug, food or household use.

Synonyms 1% Phenolphthalein in IPA	
Section 2 Hazards Identification	
<ul> <li>Signal word: DANGER</li> <li>Pictograms: GHS02 / GHS07 / GHS08</li> <li>Target organs: Central nervous system, Liver, Kidneys.</li> <li>Image: Signal Word: System, Liver, Kidneys.</li> <li>Image: Signal Word: System, Liver, Kidneys.</li> <li>CHS Classification:</li> <li>Flammable liquid (Category 2)</li> <li>Eye irritation (Category 2)</li> <li>STOT-SE (Category 2)</li> <li>Mutagenicity (Category 2)</li> <li>Carcinogen (Category 1B)</li> <li>Reproductive toxicity (Category 2)</li> <li>Cates erious eye irritation.</li> <li>H325: Highly flammable liquid and vapour.</li> <li>H319: Causes serious eye irritation.</li> <li>H336: May cause drowsiness or dizziness.</li> <li>H341: Suspected of causing genetic defects.</li> <li>H350: May cause cancer.</li> <li>H361: Suspected of damaging fertility.</li> </ul>	Precautionary statement(s):         P201: Obtain special instructions before use.         P202: Do not handle until all safety precautions have been read and understood.         P210: Keep away from heat/sparks/open flames/hot surfaces No smoking.         P233: Keep container tightly closed.         P240: Ground/bond container and receiving equipment.         P241: Use explosion-proof electrical/ventilating/lighting equipment.         P242: Use only non-sparking tools.         P243: Take precautionary measures against static discharge.         P260: Do not breathe fume/gas/mist/vapours/spray.         P264: Wash hands thoroughly after handling.         P271: Use only outdoors or in a well-ventilated area.         P280: Wear protective gloves/protective clothing/eye protection/face protection.         P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.         P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.         P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.         Remove contact lenses, if present and easy to do. Continue rinsing.         P312: Call a POISON CENTER or doctor/physician if you feel unwell.         P308+P313: If exposed or concerned: Get medical advice/attention.         P362: Take off contaminated clothing and wash before reuse.         P370+P378: In case of fire: Use dry chemical, alcohol fo

Ca Prop 65 - WARNING! This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 3	Composition / Information on	Ingredients			
Chemical Name		CAS #	%	EINECS	
Isopropyl alcohol		67-63-0	70%	200-661-7	
Water		7732-18-5	29%	231-791-2	
Phenolphthalein		77-09-8	1%	201-004-7	
Section 4	First Aid Measures				

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL. IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

#### Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

#### Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8	Exposure Controls / Personal Pro	tection		
Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Linits.	Isopropanol	TWA: 200 ppm / STEL: 400 ppm	TWA: 400 ppm / 980 mg/m <sup>3</sup>	TWA: 400 ppm / STEL: 500 ppm

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHAapproved respirator.

Section 9							
	Physical & Chemical Prop	perties					
Odor: Aromatic o Odor threshold: pH: Data not avai Melting / Freezing p Boiling point: App	Data not available.	Flammability (s Explosion limit Vapor pressure Vapor density Relative density	te (Butyl acetate = 1) solid/gas): Data not a ss: Lower / Upper: 2 e (mm Hg): 33 mm @ (Air = 1): 2.1 [Pure IP (Specific gravity): 0.8* Complete in water.	available. % / 12% [Pure IPA] 20°C [Pure IPA]	Auto-ignitio Decompos Viscosity: Molecular	n temperature: 399°C	nol / water): Data not availal C (750°F) ASTM-E659-78 [Pure I : Data not available. *[70% IF
Section 10	Stability & Reactivity						
Chemical stabilit Conditions to av	y: Stable oid: Excessive temperatures, hea		us polymerization: Name and other sources				
Incompatible ma	terials: Strong oxidizing materials	, caustics, alumin	ums, metals, nitroform	n, oleum, chlorinated	compounds of	can react vigorously	with this alcohol.
Hazardous deco	mposition products: Oxides of ca	arbon.					
Section 11	Toxicological Information	I.					
NTP: Reasonably IARC classified: C OSHA: No compo Reproductive to: STOT-single exp STOT-repeated et Aspiration hazar Potential health Inhalation: Inhala		humans. [Phenol els greater than or is classified as sp nay cause central	phthalein] • equal to 0.1% is iden ecific target organ tox nervous system depre	icant, single exposu	re, category 3	with narcotic effects	S.
Ingestion: Aspirat develop if this occ Skin: Prolonged of Eyes: Contact ca <b>Signs and sympt</b>	or repeated contact may cause irrit uses burning sensation, redness, s toms of exposure: See Potential	ter the lungs (aspi ation and drying, swelling, and/or bl health effects abo	rated) when swallowe cracking and defatting lurred vision. ove.	of the skin which ca			al chemical pneumonia can
Ingestion: Aspiral develop if this occ Skin: Prolonged of Eyes: Contact ca Signs and sympt Additional inform Section 12	curs. or repeated contact may cause irrit uses burning sensation, redness, s toms of exposure: See Potential nation: RTECS #: NT8050000 [Is Ecological Information	ter the lungs (aspi ation and drying, swelling, and/or bl health effects abc sopropanol] / SM8	rated) when swallowe cracking and defatting lurred vision. ove. i380000 [Phenolphtha	of the skin which ca lein]			al chemical pneumonia can
Ingestion: Aspirat develop if this occ Skin: Prolonged Eyes: Contact ca Signs and symp Additional inform Section 12 Toxicity to fish: Toxicity to fish: Toxicity to algae Persistence and Mobility in soil: Other adverse ef	curs. or repeated contact may cause irrit iuses burning sensation, redness, s toms of exposure: See Potential nation: RTECS #: NT8050000 [Is Ecological Information Pimephales promelas (Fish, fresh nia and other aquatic invertebrat : Scenedesmus quadricauda (Alga degradability: No data available No data available fects: An environmental hazard co	ter the lungs (aspi ation and drying, swelling, and/or bl health effects abc sopropanol] / SM8 water) LC50: 9644 es: Daphnia mag e), LOEC50 = 1,8 Bioaccum PBT and vi	rated) when swallowe cracking and defatting lurred vision. bye. 380000 [Phenolphtha 0 mg/l/96 hours [Isopro na (Crustacia), EC50 00 mg/l/7 days [Isopro lative potential: No PvB assessment: No	of the skin which ca lein] =>10,000 mg/l/24 h ppanol] data available o data available	un lead to derr	natitis.	al chemical pneumonia can
Ingestion: Aspiral develop if this occ Skin: Prolonged of Eyes: Contact ca Signs and symp Additional inform Section 12 Toxicity to fish: Toxicity to fish: Toxicity to algae: Persistence and Mobility in soil: Other adverse ef Section 13	curs. or repeated contact may cause irrit iuses burning sensation, redness, s toms of exposure: See Potential nation: RTECS #: NT8050000 [Is Ecological Information Pimephales promelas (Fish, fresh nia and other aquatic invertebrat : Scenedesmus quadricauda (Alga degradability: No data available No data available fects: An environmental hazard ca Disposal Considerations	ter the lungs (aspi swelling, and/or bl health effects abc sopropanol] / SM8 water) LC50: 9644 es: Daphnia mag e), LOEC50 = 1,8 Bioaccumu PBT and vi annot be excluded	rated) when swallowe cracking and defatting lurred vision. bye. 1380000 [Phenolphtha 0 mg/l/96 hours [Isopro na (Crustacia), EC50 00 mg/l/7 days [Isopro ulative potential: No PvB assessment: No d in the event of unpro	of the skin which ca lein] opanol] = >10,000 mg/l/24 h opanol] data available o data available fessional handling o	n lead to derr ours (Isopropa r disposal.	natitis. nol]	
Ingestion: Aspiral develop if this occ Skin: Prolonged Eyes: Contact ca Signs and sympi Additional inform Section 12 Toxicity to fish: Toxicity to fish: Toxicity to dapher Toxicity to dapae Persistence and Mobility in soil: Other adverse ef Section 13 These disposal regulations may	curs. or repeated contact may cause irrit iuses burning sensation, redness, s toms of exposure: See Potential nation: RTECS #: NT8050000 [Is Ecological Information Pimephales promelas (Fish, fresh nia and other aquatic invertebrat : Scenedesmus quadricauda (Alga degradability: No data available No data available fects: An environmental hazard co	ter the lungs (aspi ation and drying, swelling, and/or bl health effects abc sopropanol] / SM8 water) LC50: 9644 es: Daphnia mag e), LOEC50 = 1,8 Bioaccumu PBT and vi annot be excluded disposal of catal	rated) when swallowe cracking and defatting lurred vision. bye. 380000 [Phenolphtha 0 mg/l/96 hours [Isopro na (Crustacia), EC50 00 mg/l/7 days [Isopro lative potential: No PvB assessment: No d in the event of unpro	of the skin which ca lein] = >10,000 mg/l/24 h oppanol] data available fessional handling o nly. Federal regul	n lead to derr ours [Isopropa r disposal. ations may a	natitis.	ntainer. State and/or local
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The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.