Section 1 Chemical Product and Company Identification

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

Product: L+ASCORBIC ACID

Synonyms: Vitamin C

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Precautionary statement(s):
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Section 3 Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascorbic acid</td>
<td>50-81-7</td>
<td>100%</td>
<td>200-066-2</td>
</tr>
</tbody>
</table>

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: 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: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.
Section 7 Handling & Storage

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. Protect from light, air and moisture.

Section 8 Exposure Limits / Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
<th>NIOSH (REL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascorbic Acid</td>
<td>None establ</td>
<td>None establ</td>
<td>None establ</td>
</tr>
</tbody>
</table>

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/MSHA- approved respirator.

Section 9 Physical & Chemical Properties

**Appearance:** Solid, white, crystalline powder.

**Odor:** Nearly odorless.

**Boiling point:** 190-192°C (374-377°F)

**Melting / Freezing point:** 190-192°C (374-377°F)

**Vapor pressure:** Negligible

**Relative density (Specific gravity):** 1.65

**Solubility:** 30% by weight at 20°C in water.

**Partition coefficient:** Data not available

**Auto-ignition temperature:** 660°C (1220°F)

**Decomposition temperature:** Data not available

**Viscosity:** Data not available

**Molecular formula:** C6H8O6

**Molecular weight:** 176.13

**Hazard class:** Not applicable

**UN/NA number:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

Section 10 Stability & Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures, moisture, air and light.

**Incompatible materials:** Alkalis, iron, copper, water, oxidizing agents, acids.

**Hazardous decomposition products:** Oxides of carbon.

Section 11 Toxicological Information

**Acute toxicity:** Data not available

**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

**Carcinogenicity:** Data not available

**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as a 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 cough and sore throat.

**Ingestion:** May cause gastrointestinal irritation.

**Skin:** May cause mild irritation with redness.

**Eyes:** May cause mild irritation with redness and pain.

**Signs and symptoms of exposure:** See Potential health effects above.

**Additional information:** RTECS #: CI7650000

Section 12 Ecological Information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** 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:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2016 ERG Guide #** 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>CERCLA (RQ)</th>
<th>RCRA code</th>
<th>DSL</th>
<th>NDSL</th>
<th>CA Prop 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascorbic acid</td>
<td>Listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Listed</td>
<td>Not listed</td>
<td>This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.</td>
</tr>
</tbody>
</table>

Section 16 Other Information

The information 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.

Form 06/2015

Revision Date: January 31, 2018

Supercedes: October 25, 2016
Section 2 Hazards Identification

**Product**

**BENEDICT’S QUALITATIVE SOLUTION**

**Synonyms**

Benedict’s Sugar Test Reagent, Benedict’s Solution, Benedict’s Qualitative Reagent

**Signal word:** WARNING

**Pictograms:** GHS07 / GHS09

**Target organs:** Liver, kidneys.

**GHS Classification:**

- Skin irritation (Category 3)
- Eye irritation (Category 2B)
- Acute toxicity, oral (Category 4)
- Acute toxicity, dermal (Category 5)
- Acute toxicity, inhalation (Category 4)
- Aquatic toxicity (Category 1)

**GHS Label information: Hazard statement(s):**

- H302: Harmful if swallowed.
- H313: May be harmful in contact with skin.
- H316: Causes mild skin irritation.
- H320: Causes eye irritation.
- H332: Harmful if inhaled.

**Precautionary statement(s):**

- P261: Avoid breathing mist/vapours/spray.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P273: Avoid release to the environment.
- P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P332+P313: If skin irritation occurs: Get medical attention.
- P337+P313: If eye irritation persists: Get medical attention.
- P391: Collect spillage.
- P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

**Section 3 Composition / Information on Ingredients**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>77.9%</td>
<td>231-791-2</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>68-04-2</td>
<td>13.7%</td>
<td>200-675-3</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>497-19-8</td>
<td>6.9%</td>
<td>207-838-8</td>
</tr>
<tr>
<td>Cupric sulfate, pentahydrate</td>
<td>7758-99-8</td>
<td>1.5%</td>
<td>231-847-6 (anhydrous)</td>
</tr>
</tbody>
</table>

**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:** 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:** 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.
Section 7 Handling & Storage
Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Exposure Limits</th>
<th>Chemical Name</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
<th>NIOSH (REL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cupric sulfate</td>
<td>TWA: 0.2 mg/m³ copper fume as Cu</td>
<td>None established.</td>
<td>None established.</td>
</tr>
</tbody>
</table>

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/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

| Appearance | Clear, pale blue liquid. |
| Odor | No odor. |
| Odor threshold | N/A |
| pH | N/A |
| Melting / Freezing point | ~ 0°C (~ 32°F) [water] |
| Boiling point | ~ 100°C (212°F) [water] |
| Flash point | Not flammable. |

Hazardous decomposition products: Carbon oxides.

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Acids and strong oxidizers.

Section 11 Toxicological Information

Acute toxicity:
- Oral-rat LD50: 300 mg/kg (Copper sulfate) - Dermal-rat LD50: >1000 mg/kg (Copper sulfate) - Inhalation-rat LC50: 2.3 mg/l 2 hour (Sodium carbonate)

Skin corrosion/irritation: Slightly irritating
Serious eye damage/irritation: Slightly irritating
Respiratory or skin sensitization: Not a sensitizer
Germ cell mutagenicity: Data not available
Carcinogenicity: 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.

Reproducitively toxic: 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.
- Ingestion: May be harmful if swallowed.
- Skin: Contact may cause irritation.
- Eyes: Contact may cause irritation.

Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: Not available for this mixture.

Section 12 Ecological Information

Toxicity to fish: Salmo gairdneri (Fish, estuary, fresh water) LC50: < .75-.84 mg/l
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: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No

2016 ERG Guide # 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.

Component | TSCA | CERLCA (RQ) | RCRA code | DSL | NDSL | CA Prop 65
---|---|---|---|---|---|---
All components listed with TSCA.

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

Section 16 Other 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 Identification**

**Product:** 2,6-DICHLOROINDOPHENOL, SODIUM SALT

**Synonyms:** DPIP / Dichloroindophenol

**Section 2: Hazards Identification**

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: None required

Pictograms: No symbol required

Target organs: None known

GHS Classification: None required

GHS Label information: Hazard statement: None required

Precautionary statement: None required

**Supplemental information:**

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

**Section 3: Composition / Information on Ingredients**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Dichloroindophenol</td>
<td>620-45-1</td>
<td>min 99%</td>
<td>210-640-4</td>
</tr>
</tbody>
</table>

**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.
Section 7  Handling & Storage
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: Moisture and light sensitive. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8  Exposure Limits / Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
<th>NIOSH (REL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Dichloroindophenol</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

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/MSHA-approved respirator.

Section 9  Physical & Chemical Properties

Appearance: Solid. Dark green powder.
Odor: No odor.
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: Data not available
Boiling point: Decomposes
Flash point: Not applicable

Evaporation rate (1): Data not available
Flammability (solid/gas): Not applicable
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): >1
Solubility(ies): Soluble in water.
Partition coefficient: Data not available
Autoignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: C12H6O2NNaO2
Molecular weight: 290.08

Section 10  Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures and heat. Avoid contact with moisture and light.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, nitrogen oxides, chlorine.

Section 11  Toxicological Information

Acute toxicity: Data not available
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
Carcinogenicity: 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 cause respiratory irritation.
Ingestion: May be harmful if swallowed.
Skin: Contact with skin may cause irritation.
Eyes: Contact with eyes may cause irritation.

Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: GU5495000

Section 12  Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Persistence and degradability: Data not available
Bioaccumulative potential: Data not available
Mobility in soil: Data not available
PBT and vPvB assessment: Data not 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: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>CERLCA (RQ)</th>
<th>RCRA code</th>
<th>DSL</th>
<th>NDSL</th>
<th>CA Prop 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Dichloroindophenol</td>
<td>Listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Listed</td>
<td>Not listed</td>
<td>This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.</td>
</tr>
</tbody>
</table>

Section 16  Other 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.

Revision Date: February 8, 2018
Supercedes: November 30, 2016
HOME SCIENCE TOOLS
665 Carbon Street
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800-860-6272
www.homesciencetools.com

IODINE-POTASSIUM IODIDE SOLUTION

Signal word: WARNING
Pictograms: GHS07 / GHS09
Target organs: Thyroid, kidneys, endocrine system, skin, eyes, reproductive system, central nervous system.

GHS Classification:
Acute toxicity, dermal (Category 4)
Acute toxicity, inhalation (Category 4)
Aquatic toxicity, acute (Category 1)

GHS Label information: Hazard statement(s):
H312: Harmful in contact with skin.
H332: Harmful if inhaled.
H400: Very toxic to aquatic life.

Precautionary statement(s):
P261: Avoid breathing mist/vapours/spray.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P312: Call a POISON CENTER or doctor if you feel unwell.
P362+P364: Take off contaminated clothing and wash it before reuse.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>95.10%</td>
<td>231-791-2</td>
</tr>
<tr>
<td>Potassium iodide</td>
<td>7681-11-0</td>
<td>3.05%</td>
<td>231-659-4</td>
</tr>
<tr>
<td>Iodine</td>
<td>7553-56-2</td>
<td>1.85%</td>
<td>231-442-4</td>
</tr>
</tbody>
</table>

Additional Information:
Health hazards not otherwise classified (HHNOC) - Not Known
Physical hazards not otherwise classified (PHNOC) - Not Known

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

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: HARMFUL IN CONTACT WITH SKIN. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. Harmful in contact with skin.

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

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

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: 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.
Section 7 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. Remove and wash clothing before reuse.
Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Exposure Limits:</th>
<th>Chemical Name</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
<th>NIOSH (REL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iodine CAS # 7553-56-2</td>
<td>TWA: 0.01 ppm (TLV) STEL: 0.1 ppm (STEL)</td>
<td>STEL: C 0.1 ppm/C 1 mg/m³</td>
<td>STEL: C 0.1 ppm/C 1 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

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/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

**Appearance:** Deep amber liquid.

**Odor:** Characteristic odor.

**Odor threshold:** Not applicable.

**pH:** Data not available.

**Melting / Freezing point:** ~ -10°C (~ 14°F) [water]

**Boiling point:** ~ 100°C (212°F) [water]

**Flash point:** Not flammable.

**Evaporation rate:** (Water = 1): < 1

**Flammability (solid/gas):** Not applicable.

**Explosion limits:** Lower / Upper: Not applicable

**Vapor pressure (mm Hg):** 14 [water]

**Vapor density (Air = 1):** 0.7 [water]

**Relative density (Specific gravity):** 1.0 [water]

**Solubility:**(ies): Complete in water.

**Partition coefficient:** (n-octanol / water): Not applicable

**Auto-ignition temperature:** Not applicable

**Decomposition temperature:** Data not available.

**Viscosity:** Data not available.

**Molecular formula:** Mixture

**Molecular weight:** Mixture

Section 10 Stability & Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Stable under recommended storage conditions. Excessive temperatures which cause evaporation.

**Incompatibilities with other materials:** Metals or unsaturated organic compounds, ammonia solutions or alkaline solutions of ammonia salts. Will form explosive nitrogen iodides when reacted with gaseous ammonia.

**Hazardous decomposition products:** Toxic iodine fumes.

Section 11 Toxicological Information

**Acute toxicity:** Oral-Rat LD50: 14,000 mg/kg [iodine CAS # 7553-56-2]

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Inhalation-rat 3.1 mg/m³ / 24 hour / 13 weeks - continuous [iodine CAS # 7553-56-2]

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

**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.

**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.

**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:** Symptoms include cough, wheezing, and labored breathing. Symptoms may be delayed.

**Ingestion:** Causes abdominal pain, diarrhea, nausea, and vomiting. Ingestion of levels of 2-3 grams of iodine may cause death.

**Skin:** Contact may cause redness and pain.

**Eyes:** Contact causes watering of the eyes, redness and pain.

**Signs and symptoms of exposure:** Effects of short-term exposure: Lachrymator. The substance is severely irritating to the eyes and the respiratory tract, and is irritating to the skin. Inhalation of the vapor may cause asthma-like reactions. Inhalation of the vapor may cause lung edema. The effects may be delayed. Effects of long-term exposure: Repeated or prolonged contact may cause skin sensitization in rate cases. Repeated or prolonged inhalation exposure may cause asthma-like syndrome. The substance may have effects on the thyroid. Specific data not available for this mixture. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: NN1570600 [iodine CAS # 7553-56-2]

Section 12 Ecological Information

**Toxicity to fish:** Very toxic to aquatic life.

**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:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Exceptions:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**2016 ERG Guide #** 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>CERCLA (RQ)</th>
<th>RCRA code</th>
<th>DSL</th>
<th>NDSL</th>
<th>CA Prop 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iodine</td>
<td>Listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Potassium iodide</td>
<td>Listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

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

Section 16 Other 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.

Form 06/15

**Revision Date:** February 27, 2018

**Supercedes:** February 22, 2018
HOME SCIENCE TOOLS
665 Carbon Street
Billings, MT 59102
800-860-6272
www.homesciencetools.com

Section 1  Chemical Product and Company Identification

Product: BIURET TEST REAGENT (for protein test)
Synonyms: Biuret Reagent Solution / Biuret Reagent / Biuret Solution

Section 2  Hazards Identification

Signal word: DANGER
Pictograms: GHS05
Target organs: Respiratory tract, gastrointestinal tract, eyes, skin.

GHS Classification:
Skin corrosion (Category 1A)
Eye damage (Category 1)

GHS Label information: Hazard statement:
H314: Causes severe skin burns and eye damage.

Section 3  Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>90.03%</td>
<td>231-791-2</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>6.42%</td>
<td>215-185-5</td>
</tr>
<tr>
<td>Potassium sodium tartrate</td>
<td>6381-59-5</td>
<td>2.00%</td>
<td>206-156-8</td>
</tr>
<tr>
<td>Cupric sulfate, pentahydrate</td>
<td>7758-99-8</td>
<td>1.18%</td>
<td>231-847-6</td>
</tr>
<tr>
<td>Potassium iodide</td>
<td>7681-11-0</td>
<td>0.35%</td>
<td>231-659-4</td>
</tr>
<tr>
<td>Ethylenediaminetetraacetic acid</td>
<td>6381-92-6</td>
<td>0.02%</td>
<td>None assigned.</td>
</tr>
</tbody>
</table>

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: Dry chemical, water spray, alcohol foam. Can react with carbon dioxide to form sodium carbonate.

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: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Contact with metals can generate 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: 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.
Section 7 Handling & Storage

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.

Section 8 Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Exposure Limits:</th>
<th>Chemical Name</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
<th>NIOSH (REL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sodium hydroxide</td>
<td>STEL: 0.2 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td>STEL: 2 mg/m³</td>
</tr>
</tbody>
</table>

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 face shield, 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/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.

Odor: No odor.

Odor threshold: Not applicable.

pH: Data not available.

Boiling point: ~ 100°C (~ 212°F) [water]

Melting / Freezing point: ~ 0°C (~ 32°F) [water]

Flash point: Not flammable.

Evaporation rate (Water = 1): < 1

Flammability (solid/gas): Not applicable.

Explosion limits: Lower / Upper: Not applicable

Vapor pressure (mm Hg): 14 [water]

Vapor density (Air = 1): 0.7 [water]

Relative density (Specific gravity): 1.0 [water]

Solubility(ies): Complete in water.

Partition coefficient: (n-octanol / water): Not applicable

Auto-ignition temperature: Not applicable

Decomposition temperature: Data not available.

Viscosity: Data not available.

Molecular formula: Mixture

Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Can react with carbon dioxide to form sodium carbonate.

Incompatible materials: Metals, acids, organic compounds, organic nitro compounds.

Hazardous decomposition products: Sodium oxide. Reacts with metals to form flammable and explosive hydrogen gas.

Section 11 Toxicological Information

Acute toxicity: Data not available

Skin corrosion/irritation: Skin - rabbit - Causes severe burns. - 24 h [Sodium hydroxide]

Serious eye damage/irritation: Eyes - rabbit - Severe eye irritation - 24 h [Sodium hydroxide]

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: 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. Material is extremely 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.

Eyes: Causes eye burns. Causes severe eye burns.

Signs and symptoms of exposure: Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Additional information: RTECS #: WB4900000 [Sodium hydroxide]

Section 12 Ecological Information

Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h [Sodium hydroxide]

Toxicity to daphnia and other aquatic invertebrates: Immobilization EC50 - Daphnia - 40.38 mg/l - 48 h [Sodium hydroxide]

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: UN1824 Shipping name: Sodium hydroxide solution

Hazard class: 8 Packing group: II

Reportable Quantity: 1,000 lbs (454 kg) Marine pollutant: No

Exceptions: Limited quantity equal to or less than 1 L 2016 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.

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<th>NDSL</th>
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</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>Listed</td>
<td>1,000 lbs (454 kg)</td>
<td>D002</td>
<td>Listed</td>
<td>Not listed</td>
<td>This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.</td>
</tr>
</tbody>
</table>

Section 16 Other 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.