



Be Right™

SAFETY DATA SHEET

Issue Date 16-Aug-2018

Revision Date 26-Jan-2024

Version 1.5

Page 1 / 15

1. IDENTIFICATION

Product identifier

Product Name OTO Reagent

Other means of identification

Product Code(s) 26870BG

Safety data sheet number M01752

UN/ID no UN1789

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory reagent.

Uses advised against None.

Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|-------------|
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |
| Carcinogenicity | Category 1B |
| Specific target organ toxicity (single exposure) | Category 3 |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



Hazard statements

H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves, protective clothing, eye protection, and face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
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
P310 - Immediately call a POISON CENTER or doctor/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
P201 - Obtain special instructions before use
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Percent ranges are used where confidential product information is applicable.

| Chemical name | CAS No | Percent Range | HMRIC # |
|---------------------------------------|-----------|---------------|---------|
| Hydrochloric acid | 7647-01-0 | 20 - 30% | - |
| 3,3-Dimethylbenzidine dihydrochloride | 612-82-8 | <1% | - |

4. FIRST AID MEASURES

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way

valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.

| | |
|---|---|
| Eye contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. |
| Ingestion | Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention. |
| Self-protection of the first aider | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. |

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable Extinguishing Media | Caution: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. |
| Hazardous combustion products | This material will not burn. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|--------------------------------------|----------------|--|--|
| Hydrochloric acid CAS#: 7647-01-0 | Ceiling: 2 ppm | (vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³ | IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³ |

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

| | |
|--|---|
| Hand Protection | Wear suitable gloves. Impervious gloves. |
| Eye/face protection | Face protection shield. |
| Skin and body protection | Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. |
| General Hygiene Considerations | Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. |
| Environmental exposure controls | Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water. |
| Thermal hazards | None under normal processing. |

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|------------------|-----------------------|-------------------|
| Physical state | Liquid | Color | colorless |
| Appearance | aqueous solution | Odor threshold | No data available |
| Odor | None | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|-------------------|-------------------------|
| Molecular weight | No data available | |
| pH | < 1 | |
| Melting point / freezing point | No data available | |
| Initial boiling point and boiling range | No data available | |
| Evaporation rate | No data available | |
| Vapor pressure | No data available | |
| Relative vapor density | No data available | |
| Specific gravity - VALUE 1 | 1 | |
| Partition coefficient | Not applicable | |
| Soil Organic Carbon-Water Partition Coefficient | Not applicable | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | No data available | |
| Kinematic viscosity | No data available | |

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Product Code(s) 26870BG
Issue Date 16-Aug-2018
Version 1.5

Product Name OTO Reagent
Revision Date 26-Jan-2024
Page 6 / 15

Solubility in other solvents

| Chemical Name | Solubility classification | Solubility | Solubility Temperature |
|---------------|---------------------------|-------------|------------------------|
| Acid | Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other information

Metal Corrosivity

Classified as corrosive to metal according to GHS criteria

Steel Corrosion Rate

> 6.25 mm/yr / > 0.25 in/yr

Aluminum Corrosion Rate

No data available

Volatile Organic Compounds (VOC) Content

| Chemical name | CAS No | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|---------------------------------------|-----------|--|---------------------|
| Hydrochloric acid | 7647-01-0 | Not applicable | - |
| 3,3-Dimethylbenzidine dihydrochloride | 612-82-8 | No data available | - |

Explosive properties

Upper explosion limit

No data available

Lower explosion limit

No data available

Flammable properties

Flash point

No data available

Flammability Limit in Air

Upper flammability limit:

No data available

Lower flammability limit:

No data available

Oxidizing properties

No data available.

Bulk density

No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation

Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact

Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Corrosive. Causes severe burns. Avoid contact with skin and clothing.

Ingestion

Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------|---------------|---------------|-----------------------|--|
| 3,3-Dimethylbenzidine dihydrochloride (<1%) CAS#: 612-82-8 | Rat LD ₅₀ | 404 mg/kg | None reported | None reported | Vendor SDS |

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

| | |
|-------------------------------|--------------------------|
| ATEmix (oral) | No information available |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

Causes severe burns.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

No data available.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|---------------------------|---------|---------------|---------------|-------------------|--|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Existing human experience | Human | None reported | None reported | Corrosive to skin | RTECS |

Serious eye damage/irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

No data available.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|---------------------------|---------|---------------|---------------|-------------------|--|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Existing human experience | Human | None reported | None reported | Corrosive to eyes | RTECS |

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

May cause respiratory irritation.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------------------|---------------|---------------|---|--|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Man LD _{Lo} | 2.857 mg/kg | None reported | Vascular BP lowering not characterized in autonomic section Lungs, Thorax, or Respiration Respiratory depression Gastrointestinal Other changes | RTECS |
| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
| Hydrochloric acid (20 - 30%) | Human TC _{Lo} | 0.05 mg/L | None reported | Lungs, Thorax, or Respiration | RTECS |

| | | | | | |
|-----------------|--|--|--|-------|--|
| CAS#: 7647-01-0 | | | | Cough | |
|-----------------|--|--|--|-------|--|

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------|---------------|---------------|---|--|
| 3,3-Dimethylbenzidine dihydrochloride (<1%) CAS#: 612-82-8 | Rat TD _{Lo} | <= 10 mg/kg | 90 days | Liver Hepatitis (hepatocellular necrosis), diffuse Kidney, Ureter, or Bladder Other effects Blood Blood and lymphatic systems (including spleen and marrow) | Japan GHS Classification |
| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Rat TC _{Lo} | 0.000685 mg/L | 84 days | Behavioral Muscle contraction or spasticity Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) Kidney, Ureter, or Bladder Other changes in urine composition | RTECS |

Carcinogenicity

Classification based on data available for ingredients. Contains a known or suspected carcinogen.

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|---------------------------------------|-----------|-------|----------|------------------------|------|
| Hydrochloric acid | 7647-01-0 | - | Group 3 | - | X |
| 3,3-Dimethylbenzidine dihydrochloride | 612-82-8 | - | Group 2B | Reasonably Anticipated | X |

Legend

| | |
|--|--|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Group 3 - Not classifiable as a human carcinogen Group 2B - Possibly Carcinogenic to Humans |
| NTP (National Toxicology Program) | Does not apply |
| OSHA | X - Present |

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------|---------------|---------------|---|--|
| 3,3-Dimethylbenzidine dihydrochloride (<1%) | Rat TD _{Lo} | 1820 mg/kg | 65 weeks | Skin and Appendages Skin tumors Liver | RTECS |

| | | | | | |
|----------------|--|--|--|--------|--|
| CAS#: 612-82-8 | | | | Tumors | |
|----------------|--|--|--|--------|--|

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

No data available.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|----------------------------|-------------------------------|----------------|---------------|---------------------------------------|--|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Cytogenetic analysis | Hamster lung | 30 mmol/L | None reported | Positive test result for mutagenicity | RTECS |
| 3,3-Dimethylbenzidine dihydrochloride (<1%) CAS#: 612-82-8 | Mutation in microorganisms | <i>Salmonella typhimurium</i> | 10000 ng/plate | None reported | Positive test result for mutagenicity | RTECS |

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------|---------------|---------------|--|--|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Rat TC _{Lo} | 0.450 mg/L | 1 hours | Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus) Specific Developmental Abnormalities Homeostasis | RTECS |

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Mixture

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Substance

Product Code(s) 26870BG
Issue Date 16-Aug-2018
Version 1.5

Product Name OTO Reagent
Revision Date 26-Jan-2024
Page 11 / 15

Aquatic Acute Toxicity
No data available.

Aquatic Chronic Toxicity
No data available.

Persistence and degradability

Mixture
No data available.

Mixture
No data available.

Partition coefficient Not applicable

Mobility

Soil Organic Carbon-Water Partition Coefficient Not applicable

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number D002

Special instructions for disposal Add a non-reactive absorbant material if waste contains free liquid and seal bag. Dispose of material in an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN1789
Proper shipping name Hydrochloric Acid Solution
Transport hazard class(es) 8
Packing Group III
Emergency Response Guide Number 157

TDG

UN/ID no UN1789
Proper shipping name Hydrochloric Acid Solution
Transport hazard class(es) 8
Packing Group III

IATA

UN number or ID number UN1789
Proper shipping name Hydrochloric Acid Solution
Transport hazard class(es) 8

Product Code(s) 26870BG
Issue Date 16-Aug-2018
Version 1.5

Product Name OTO Reagent
Revision Date 26-Jan-2024
Page 12 / 15

Packing group III
ERG Code 157

IMDG

UN number or ID number UN1789
Proper shipping name Hydrochloric Acid Solution
Transport hazard class(es) 8
Packing Group III

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Does not comply
IECSC Complies
KECL Does not comply
PICCS Complies
TCSI Complies
AICS Does not comply
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical name | SARA 313 - Threshold Values % |
|---|-------------------------------|
| Hydrochloric acid (CAS #: 7647-01-0) | 1.0 |
| 3,3-Dimethylbenzidine dihydrochloride (CAS #: 612-82-8) | 0.1 |

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|--------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Hydrochloric acid 7647-01-0 | 5000 lb | - | - | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|--------------------------------|--------------------------|----------------|--|
| Hydrochloric acid 7647-01-0 | 5000 lb | 5000 lb | RQ 5000 lb final RQ RQ 2270 kg final RQ |

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

| Chemical name | U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues |
|--|--|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Release - Toxic (concentration >=37%); Release - Toxic (anhydrous); Theft - Weapons of Mass Effect (anhydrous) |

U.S. - DEA (Drug Enforcement Administration) List I & List II

| Chemical name | U.S. - DEA (Drug Enforcement Administration) - List I or Precursor Chemicals | U.S. - DEA (Drug Enforcement Administration) - List II or Essential Chemicals |
|--|--|---|
| Hydrochloric acid (20 - 30%) CAS#: 7647-01-0 | Not Listed | 0.0 kg Domestic Sales Weight (listed under anhydrous Hydrogen chloride); 50 gallon Export Volume (exports, transshipments and international transactions to designated countries given in 1310.08(b)); 27 kg Export Weight (exports, transshipments and international transactions to designated countries given in 1310.08(b), listed under anhydrous Hydrogen chloride) |

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

| Chemical name | California Proposition 65 |
|---|---------------------------|
| 3,3-Dimethylbenzidine dihydrochloride (CAS #: 612-82-8) | Carcinogen |



WARNING: This product can expose you to chemicals including 3,3-Dimethylbenzidine dihydrochloride, which is known to the State of California to cause cancer.

For more information, go to <http://www.P65Warnings.ca.gov>

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---------------|------------|---------------|--------------|
| | | | |

| | | | |
|--|---|---|---|
| Hydrochloric acid 7647-01-0 | X | X | X |
| 3,3-Dimethylbenzidine dihydrochloride 612-82-8 | X | - | - |

U.S. EPA Label Information

| Chemical name | FIFRA | FDA |
|-------------------|----------|-----------------|
| Hydrochloric acid | 180.0910 | 21 CFR 182.1057 |

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

| Chemical name | Global Automotive Declarable Substance List Classifications | Global Automotive Declarable Substance List Thresholds |
|---|---|--|
| 3,3-Dimethylbenzidine dihydrochloride 612-82-8 | Prohibited Substance (LR) | 0.01 % |

NFPA and HMIS Classifications

| NFPA | Health hazards - 3 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
|------|---------------------------|------------------|----------------------|------------------------------------|
| HMIS | Health hazards - 3 - * | Flammability - 0 | Physical hazards - 0 | Personal protection - X - I |

Key or legend to abbreviations and acronyms used in the safety data sheet

| | |
|-------------|---|
| ACGIH | ACGIH (American Conference of Governmental Industrial Hygienists) |
| ATSDR | ATSDR (Agency for Toxic Substances and Disease Registry) |
| CCRIS | CCRIS (Chemical Carcinogenesis Research Information System) |
| CDC | CDC (Center for Disease Control) |
| CEPA | CEPA (Canadian Environmental Protection Agency) |
| CICAD | CICAD (Concise International Chemical Assessment Documents) |
| ECHA | ECHA (The European Chemicals Agency) |
| EEA | EEA (European Environment Agency) |
| EPA | EPA (Environmental Protection Agency) |
| ERMA | ERMA (New Zealand's Environmental Risk Management Authority) |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™ |
| FDA | FDA (Food & Drug Administration) |
| GESTIS | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB | HSDB (Hazardous Substances Data Bank) |
| INERIS | INERIS (The National Industrial Environment and Risks Institute) |
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety) |
| IUCLID | IUCLID (The International Uniform Chemical Information Database) |
| NITE | Japan National Institute of Technology and Evaluation (NITE) |
| NIH | NIH (National Institutes of Health) |
| NIOSH | NIOSH (National Institute for Occupational Safety and Health) |
| LOLI | LOLI (List of Lists - An International Chemical Regulatory Database) |

Product Code(s) 26870BG
Issue Date 16-Aug-2018
Version 1.5

Product Name OTO Reagent
Revision Date 26-Jan-2024
Page 15 / 15

| | |
|------------|---|
| NDF | no data |
| NICNAS | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH | Immediately Dangerous to Life or Health |
| OSHA | OSHA (Occupational Safety and Health Administration of the US Department of Labor) |
| PEEN | PEEN (Pan European Ecological Network) |
| RTECS | RTECS (Registry of Toxic Effects of Chemical Substances) |
| SIDS | SIDS (Screening Information Dataset) for High Volume Chemicals |
| SYKE | The Finnish Environment Institute (SYKE) |
| USDA | USDA (United States Department of Agriculture) |
| USDC | USDC (United States Department of Commerce) |
| WHO | WHO (World Health Organization) |

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department

Issue Date 16-Aug-2018

Revision Date 26-Jan-2024

Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet



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SAFETY DATA SHEET

Issue Date 17-Apr-2024

Revision Date 17-Apr-2024

Version 5.5

Page 1 / 13

1. IDENTIFICATION

Obsolete Item Statement This product is Obsolete and is no longer manufactured

Product identifier

Product Name Acid Reagent

Other means of identification

Product Code(s) 212699

Safety data sheet number M00036

UN/ID no UN2923

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use.

Uses advised against None.

Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|-----------------------------------|---------------------------|
| Skin corrosion/irritation | Category 1 Sub-category A |
| Serious eye damage/eye irritation | Category 1 |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



Hazard statements

H314 - Causes severe skin burns and eye damage

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P363 - Wash contaminated clothing before reuse

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

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/physician

Other Hazards Known

May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

| | |
|-----------------|-----------------------|
| Chemical Name | Potassium pyrosulfate |
| Chemical Family | Inorganic salt. |
| Formula | $K_2S_2O_7$ |
| CAS No | 7790-62-7 |

Percent ranges are used where confidential product information is applicable.

4. FIRST AID MEASURES

Description of first aid measures

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous combustion products Sulfur oxides.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves. Impervious gloves.

Eye/face protection Face protection shield.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

General Hygiene Considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 5 / 13

Information on basic physical and chemical properties

Physical state Solid
Appearance crystalline
Odor Odorless
Color white
Odor threshold Not applicable

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|---|-------------------------|-------------------------|
| Molecular weight | 254.0 g/mole | |
| pH | ~1.0 | 5% Solution |
| Melting point / freezing point | 325 °C / 617 °F | |
| Initial boiling point and boiling range | No data available | |
| Evaporation rate | Not applicable | |
| Vapor pressure | Not applicable | |
| Relative vapor density | No data available | |
| Specific gravity - VALUE 1 | 2.25 | |
| Partition coefficient | log K _{ow} ~ 0 | |
| Soil Organic Carbon-Water Partition Coefficient | log K _{oc} ~ 0 | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | Not applicable | |
| Kinematic viscosity | Not applicable | |

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Completely soluble | 25000 mg/L | 20 °C / 68 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| None reported | No information available | No data available | No information available |

Other information

Metal Corrosivity

Steel Corrosion Rate Not applicable
Aluminum Corrosion Rate Not applicable

Volatile Organic Compounds (VOC) Content

This Product is by Weight 100% an Individual Pure Chemical Substance

Explosive properties

Upper explosion limit No data available
Lower explosion limit No data available

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 6 / 13

Flammable properties

Flash point Not applicable

Flammability Limit in Air

Upper flammability limit: No data available

Lower flammability limit: No data available

Oxidizing properties

No data available.

Bulk density

No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|---------------------|--|
| Inhalation | Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. |
| Eye contact | Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes. |
| Skin contact | May cause irritation. |
| Ingestion | Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark |

blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

No data available.

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

Not applicable

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|--------------------------------------|--------------------------|
| ATEmix (oral) | No information available |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

May cause skin irritation.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

No data available.

Serious eye damage/irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

No data available.

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 8 / 13

Ingredient Specific Target Organ Toxicity Single Exposure Data

No data available.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

Legend

| | |
|--|----------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| NTP (National Toxicology Program) | Does not apply |
| OSHA | Does not apply |

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

No data available.

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

No data available.

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 9 / 13

Mixture

Aquatic Acute Toxicity
No data available.

Aquatic Chronic Toxicity
No data available.

Substance

Aquatic Acute Toxicity
No data available.

Aquatic Chronic Toxicity
No data available.

Persistence and degradability

Mixture
No data available.

Mixture
No data available.

Partition coefficient log K_{ow} ~ 0

Mobility

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ 0

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number D002

Special instructions for disposal If permitted by regulation. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Dispose of material in an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

DOT

| | |
|-----------------------------------|---------------------------------|
| UN/ID no | UN2923 |
| Proper shipping name | CORROSIVE SOLIDS, TOXIC, N.O.S. |
| DOT Technical Name | Potassium pyrosulfate |
| Transport hazard class(es) | 8 |

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 10 / 13

Subsidiary class 6.1
Packing Group I
Emergency Response Guide Number 154

TDG

UN/ID no UN2923
Proper shipping name CORROSIVE SOLID, TOXIC, N.O.S.
TDG Technical Name Potassium pyrosulfate
Transport hazard class(es) 8
Subsidiary class 6.1
Packing Group I

IATA

UN number or ID number UN2923
Proper shipping name Corrosive solid, toxic, n.o.s.
IATA Technical Name Potassium pyrosulfate
Transport hazard class(es) 8
Subsidiary hazard class 6.1
Packing group I
ERG Code 8P

IMDG

UN number or ID number UN2923
Proper shipping name CORROSIVE SOLID, TOXIC, N.O.S.
IMDG Technical Name Potassium pyrosulfate
Transport hazard class(es) 8
Subsidiary hazard class 6.1
Packing Group I
EmS-No F-A, S-B
Special Provisions 274

Note: No special precautions necessary.

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Does not comply
IECSC Complies
KECL Complies
PICCS Complies
TCSI Complies
AICS Complies
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 11 / 13

ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute health hazard | Yes |
| Chronic Health Hazard | Yes |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable

NFPA and HMIS Classifications

| | | | | |
|-------------|---------------------------|-------------------------|-----------------------------|---|
| NFPA | Health hazards - 3 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
| HMIS | Health hazards - 3 | Flammability - 0 | Physical hazards - 0 | Personal protection - X -I |

Key or legend to abbreviations and acronyms used in the safety data sheet

| | |
|-------------|---|
| ACGIH | ACGIH (American Conference of Governmental Industrial Hygienists) |
| ATSDR | ATSDR (Agency for Toxic Substances and Disease Registry) |
| CCRIS | CCRIS (Chemical Carcinogenesis Research Information System) |
| CDC | CDC (Center for Disease Control) |
| CEPA | CEPA (Canadian Environmental Protection Agency) |
| CICAD | CICAD (Concise International Chemical Assessment Documents) |
| ECHA | ECHA (The European Chemicals Agency) |
| EEA | EEA (European Environment Agency) |
| EPA | EPA (Environmental Protection Agency) |
| ERMA | ERMA (New Zealand's Environmental Risk Management Authority) |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™ |
| FDA | FDA (Food & Drug Administration) |
| GESTIS | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB | HSDB (Hazardous Substances Data Bank) |
| INERIS | INERIS (The National Industrial Environment and Risks Institute) |
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety) |
| IUCLID | IUCLID (The International Uniform Chemical Information Database) |
| NITE | Japan National Institute of Technology and Evaluation (NITE) |
| NIH | NIH (National Institutes of Health) |
| NIOSH | NIOSH (National Institute for Occupational Safety and Health) |
| LOLI | LOLI (List of Lists - An International Chemical Regulatory Database) |
| NDF | no data |
| NICNAS | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH | Immediately Dangerous to Life or Health |
| OSHA | OSHA (Occupational Safety and Health Administration of the US Department of Labor) |
| PEEN | PEEN (Pan European Ecological Network) |
| RTECS | RTECS (Registry of Toxic Effects of Chemical Substances) |
| SIDS | SIDS (Screening Information Dataset) for High Volume Chemicals |
| SYKE | The Finnish Environment Institute (SYKE) |
| USDA | USDA (United States Department of Agriculture) |
| USDC | USDC (United States Department of Commerce) |
| WHO | WHO (World Health Organization) |

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department
Issue Date 17-Apr-2024
Revision Date 17-Apr-2024
Revision Note None

Product Code(s) 212699
Issue Date 17-Apr-2024
Version 5.5

Product Name Acid Reagent
Revision Date 17-Apr-2024
Page 13 / 13

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet



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SAFETY DATA SHEET

Issue Date 17-Dec-2020

Revision Date 26-Jan-2024

Version 8.4

Page 1 / 12

1. IDENTIFICATION

Product identifier

Product Name Starch Indicator Solution

Other means of identification

Product Code(s) 34932

Safety data sheet number M00294

Recommended use of the chemical and restrictions on use

Recommended Use Oxidation-reduction indicator. Water Analysis. Laboratory reagent.

Uses advised against Consumer use.

Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

None

Hazard statements

The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Code(s) 34932
Issue Date 17-Dec-2020
Version 8.4

Product Name Starch Indicator Solution
Revision Date 26-Jan-2024
Page 2 / 12

Substance
Not applicable

Mixture

Chemical Family Mixture.
Chemical nature aqueous solution.

Percent ranges are used where confidential product information is applicable.

| Chemical name | CAS No | Percent Range | HMRIC # |
|----------------|---------|---------------|---------|
| Salicylic acid | 69-72-7 | <1% | - |

4. FIRST AID MEASURES

Description of first aid measures

General advice No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

Hazardous combustion products No information available.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR

1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls **Engineering Controls**

Showers
Eyewash stations
Ventilation systems. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical

resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

| | |
|--|---|
| Eye/face protection | Wear safety glasses with side shields (or goggles). |
| Skin and body protection | No special protective equipment required. Avoid contact with eyes, skin and clothing. |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. |
| Environmental exposure controls | Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water. |
| Thermal hazards | None under normal processing. |

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|----------------------------------|-----------------------|--------------------------|
| Physical state | Liquid | Color | colorless |
| Appearance | Turbid solution aqueous solution | Odor threshold | No information available |
| Odor | Odorless | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--|-------------------------|
| Molecular weight | No data available | |
| pH | 3.1 | @ 20 °C |
| Melting point / freezing point | 0 °C / 32 °F | |
| Initial boiling point and boiling range | 100 °C / 212 °F | |
| Evaporation rate | 1 (water = 1) | |
| Vapor pressure | 24.002 mm Hg / .? kPa at 25 °C / .? °F | |
| Relative vapor density | 0.62 | |
| Specific gravity - VALUE 1 | 0.986 | |
| Partition coefficient | Not applicable | |
| Soil Organic Carbon-Water Partition Coefficient | Not applicable | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No information available | |
| Dynamic viscosity | ~ 1 cP (mPa s) at .? °C / .? °F | |
| Kinematic viscosity | ~ .? cSt (mm ² /s) at 20 °C / .? °F | |

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / .? °F |

Solubility in other solvents

Product Code(s) 34932
Issue Date 17-Dec-2020
Version 8.4

Product Name Starch Indicator Solution
Revision Date 26-Jan-2024
Page 5 / 12

| Chemical Name | Solubility classification | Solubility | Solubility Temperature |
|---------------|---------------------------|-------------|------------------------|
| Acid | Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other information

Metal Corrosivity

Steel Corrosion Rate No data available
Aluminum Corrosion Rate No data available

Volatile Organic Compounds (VOC) Content

| Chemical name | CAS No | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|----------------|---------|--|---------------------|
| Salicylic acid | 69-72-7 | No data available | X |

Explosive properties

Upper explosion limit No data available
Lower explosion limit No data available

Flammable properties

Flash point No data available

Flammability Limit in Air

Upper flammability limit: No data available
Lower flammability limit: No data available

Oxidizing properties

No data available.

Bulk density

Not applicable

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation No known effect based on information supplied.

Eye contact No known effect based on information supplied.

Skin contact No known effect based on information supplied.

Ingestion No known effect based on information supplied.

Symptoms No information available.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

Dermal Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------------------------------|-------------------------|---------------|---------------|-----------------------|--|
| Salicylic acid (<1%) CAS#: 69-72-7 | Rat LD ₅₀ | > 2000 mg/kg | None reported | None reported | IUCLID |

Inhalation (Dust/Mist) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------------------------------|-------------------------|---------------|---------------|-----------------------|--|
| Salicylic acid (<1%) CAS#: 69-72-7 | Rat LC ₅₀ | > 250 mg/L | 4 hours | None reported | RTECS |

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

| | |
|--------------------------------------|--------------------------|
| ATEmix (oral) | No information available |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---------------------------------------|----------------------|---------|---------------|---------------|--------------------|--|
| Salicylic acid (<1%) CAS#: 69-72-7 | Standard Draize Test | Rabbit | 500 mg | 24 hours | Mild skin irritant | RTECS |

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---------------------------------------|----------------------|---------|---------------|---------------|-------------------|--|
| Salicylic acid (<1%) CAS#: 69-72-7 | Standard Draize Test | Rabbit | 100 mg | None reported | Corrosive to eyes | RTECS |

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

No data available.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

Carcinogenicity

Based on available data, the classification criteria are not met.

Product Code(s) 34932
Issue Date 17-Dec-2020
Version 8.4

Product Name Starch Indicator Solution
Revision Date 26-Jan-2024
Page 8 / 12

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|----------------|---------|-------|------|-----|------|
| Salicylic acid | 69-72-7 | - | - | - | - |

Legend

| | |
|--|----------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Does not apply |
| NTP (National Toxicology Program) | Does not apply |
| OSHA | Does not apply |

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

No data available.

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------------------------------|----------------------|---------------|---------------|---------------------------------|--|
| Salicylic acid (<1%) CAS#: 69-72-7 | Rat TD _{Lo} | 40 mg/kg | 21 days | Maternal Effects Parturition | RTECS |

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Mixture

Aquatic Acute Toxicity

Product Code(s) 34932
Issue Date 17-Dec-2020
Version 8.4

Product Name Starch Indicator Solution
Revision Date 26-Jan-2024
Page 9 / 12

No data available.

Aquatic Chronic Toxicity
No data available.

Substance

Aquatic Acute Toxicity
No data available.

Aquatic Chronic Toxicity
No data available.

Persistence and degradability

Mixture
No data available.

Mixture
No data available.

Partition coefficient Not applicable

Mobility

Soil Organic Carbon-Water Partition Coefficient Not applicable

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number Not applicable

Special instructions for disposal Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL Complies
PICCS Complies
TCSI Complies
AICS Complies
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|----|
| Acute health hazard | No |
| Chronic Health Hazard | No |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

Product Code(s) 34932
Issue Date 17-Dec-2020
Version 8.4

Product Name Starch Indicator Solution
Revision Date 26-Jan-2024
Page 11 / 12

California Proposition 65

This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable

NFPA and HMIS Classifications

| NFPA | Health hazards - 0 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
|------|--------------------|------------------|----------------------|------------------------------------|
| HMIS | Health hazards - 0 | Flammability - 0 | Physical hazards - 0 | Personal protection - X -1 |

Key or legend to abbreviations and acronyms used in the safety data sheet

| | |
|-------------|---|
| ACGIH | ACGIH (American Conference of Governmental Industrial Hygienists) |
| ATSDR | ATSDR (Agency for Toxic Substances and Disease Registry) |
| CCRIS | CCRIS (Chemical Carcinogenesis Research Information System) |
| CDC | CDC (Center for Disease Control) |
| CEPA | CEPA (Canadian Environmental Protection Agency) |
| CICAD | CICAD (Concise International Chemical Assessment Documents) |
| ECHA | ECHA (The European Chemicals Agency) |
| EEA | EEA (European Environment Agency) |
| EPA | EPA (Environmental Protection Agency) |
| ERMA | ERMA (New Zealand's Environmental Risk Management Authority) |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™ |
| FDA | FDA (Food & Drug Administration) |
| GESTIS | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB | HSDB (Hazardous Substances Data Bank) |
| INERIS | INERIS (The National Industrial Environment and Risks Institute) |
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety) |
| IUCLID | IUCLID (The International Uniform Chemical Information Database) |
| NITE | Japan National Institute of Technology and Evaluation (NITE) |
| NIH | NIH (National Institutes of Health) |
| NIOSH | NIOSH (National Institute for Occupational Safety and Health) |
| LOLI | LOLI (List of Lists - An International Chemical Regulatory Database) |
| NDF | no data |
| NICNAS | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH | Immediately Dangerous to Life or Health |
| OSHA | OSHA (Occupational Safety and Health Administration of the US Department of Labor) |
| PEEN | PEEN (Pan European Ecological Network) |
| RTECS | RTECS (Registry of Toxic Effects of Chemical Substances) |
| SIDS | SIDS (Screening Information Dataset) for High Volume Chemicals |

Product Code(s) 34932
Issue Date 17-Dec-2020
Version 8.4

Product Name Starch Indicator Solution
Revision Date 26-Jan-2024
Page 12 / 12

| | |
|------|--|
| SYKE | The Finnish Environment Institute (SYKE) |
| USDA | USDA (United States Department of Agriculture) |
| USDC | USDC (United States Department of Commerce) |
| WHO | WHO (World Health Organization) |

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department

Issue Date 17-Dec-2020

Revision Date 26-Jan-2024

Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY©2023

End of Safety Data Sheet



Be Right™

SAFETY DATA SHEET

Issue Date 07-Oct-2019

Revision Date 26-Jan-2024

Version 3.9

Page 1 / 12

1. IDENTIFICATION

Product identifier

Product Name Stabilized Sodium Thiosulfate 2.26 ± 0.01 N

Other means of identification

Product Code(s) 2686901

Safety data sheet number M01340

Recommended use of the chemical and restrictions on use

Recommended Use High range bleach test.

Uses advised against None.

Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

None

Hazard statements

The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Percent ranges are used where confidential product information is applicable.

| Chemical name | CAS No | Percent Range | HMRIC # |
|-----------------|---------|---------------|---------|
| 1,2-Propanediol | 57-55-6 | 3 - 7% | - |

4. FIRST AID MEASURES

Description of first aid measures

| | |
|-----------------------|--|
| General advice | No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury. |
| Inhalation | Remove to fresh air. |
| Eye contact | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| Skin contact | Wash skin with soap and water. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable Extinguishing Media | Caution: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | No information available. |
| Hazardous combustion products | No information available. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should

respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Ensure adequate ventilation.

Hand Protection Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

Product Code(s) 2686901
 Issue Date 07-Oct-2019
 Version 3.9

Product Name Stabilized Sodium Thiosulfate 2.26 ± 0.01 N
 Revision Date 26-Jan-2024
 Page 4 / 12

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection No special protective equipment required. Avoid contact with eyes, skin and clothing.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid

Appearance aqueous solution

Color colorless

Odor Odorless

Odor threshold No data available

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--|-------------------------|
| Molecular weight | No data available | |
| pH | No data available | |
| Melting point / freezing point | ~ -8 °C / 17.6 °F | |
| Initial boiling point and boiling range | ~ 102 °C / 215.6 °F | |
| Evaporation rate | 0.18 (water = 1) | |
| Vapor pressure | 2.55 mm Hg / 0.34 kPa at 25 °C / 77 °F | |
| Relative vapor density | No data available | |
| Specific gravity - VALUE 1 | 1.2800 | |
| Partition coefficient | Not applicable | |
| Soil Organic Carbon-Water Partition Coefficient | Not applicable | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | No data available | |
| Kinematic viscosity | No data available | |

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| None reported | No information available | No data available | No information available |

Product Code(s) 2686901
Issue Date 07-Oct-2019
Version 3.9

Product Name Stabilized Sodium Thiosulfate 2.26 ± 0.01 N
Revision Date 26-Jan-2024
Page 5 / 12

Other information

Metal Corrosivity

Steel Corrosion Rate No data available
Aluminum Corrosion Rate No data available

Volatile Organic Compounds (VOC) Content

See ingredients information below

| Chemical name | CAS No | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|-----------------|---------|--|---------------------|
| 1,2-Propanediol | 57-55-6 | No data available | X |

Explosive properties

Upper explosion limit No data available
Lower explosion limit No data available

Flammable properties

Flash point No data available

Flammability Limit in Air

Upper flammability limit: No data available
Lower flammability limit: No data available

Oxidizing properties

No data available.

Bulk density

No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|--------------|--|
| Inhalation | No known effect based on information supplied. |
| Eye contact | No known effect based on information supplied. |
| Skin contact | No known effect based on information supplied. |
| Ingestion | No known effect based on information supplied. |

Symptoms No information available.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|----------------------------|---------------|---------------|-----------------------|--|
| 1,2-Propanediol (3 - 7%) CAS#: 57-55-6 | Rat LD ₅₀ | 20000 mg/kg | None reported | None reported | RTECS |
| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
| 1,2-Propanediol (3 - 7%) CAS#: 57-55-6 | Rabbit LD ₅₀ | 20800 mg/kg | None reported | None reported | IUCLID |

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

| | |
|-------------------------------|--------------------------|
| ATEmix (oral) | No information available |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

No data available.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Mixture

Product Code(s) 2686901
Issue Date 07-Oct-2019
Version 3.9

Product Name Stabilized Sodium Thiosulfate 2.26 ± 0.01 N
Revision Date 26-Jan-2024
Page 7 / 12

No data available.

Ingredient Eye Damage/Eye Irritation Data

No data available.

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

No data available.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|--|--|
| 1,2-Propanediol (3 - 7%) CAS#: 57-55-6 | Rat TC _{Lo} | 2.180 mg/L | 90 days | Behavioral Food intake Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases) Endocrine Changes in spleen weight | RTECS |

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|-----------------|---------|-------|------|-----|------|
| 1,2-Propanediol | 57-55-6 | - | - | - | - |

Legend

| | |
|---|----------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Does not apply |
| NTP (National Toxicology Program) | Does not apply |
| OSHA | Does not apply |

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

No data available.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|----------------------|--------------------|---------------|---------------|---------------------------------------|--|
| 1,2-Propanediol (3 - 7%) CAS#: 57-55-6 | Cytogenetic analysis | Hamster fibroblast | 32000 mg/L | None reported | Positive test result for mutagenicity | RTECS |

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

No data available.

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Mixture

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Substance

Aquatic Acute Toxicity

No data available.

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|---------------|----------------------------|------------------|---------------|--|
| 1,2-Propanediol (3 - 7%) CAS#: 57-55-6 | 96 hours | <i>Pimephales promelas</i> | LC ₅₀ | 51400 mg/L | IUCLID |
| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
| 1,2-Propanediol | 48 Hours | <i>Daphnia magna</i> | LC ₅₀ | 34400 mg/L | IUCLID |

Product Code(s) 2686901
Issue Date 07-Oct-2019
Version 3.9

Product Name Stabilized Sodium Thiosulfate 2.26 ± 0.01 N
Revision Date 26-Jan-2024
Page 9 / 12

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|----------------------|----------------------------------|----------------------|----------------------|---|
| (3 - 7%) CAS#: 57-55-6 | | | | | |
| 1,2-Propanediol (3 - 7%) CAS#: 57-55-6 | 96 hours | <i>Selenastrum capricornutum</i> | EC ₅₀ | 19000 mg/L | IUCLID |

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Mixture

No data available.

Mixture

No data available.

Partition coefficient

Not applicable

Mobility

Soil Organic Carbon-Water Partition Coefficient

Not applicable

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging

Do not reuse empty containers.

Special instructions for disposal

If permitted by regulation. Dilute to 3 to 5 times the volume with cold water. Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Dispose of material in an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

DOT

Not regulated

TDG

Not regulated

IATA

Not regulated

IMDG

Not regulated

Note:

No special precautions necessary.

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL Complies
PICCS Complies
TCSI Complies
AICS Complies
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute health hazard | Yes |
| Chronic Health Hazard | No |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|----------------------------|------------|---------------|--------------|
| 1,2-Propanediol 57-55-6 | X | - | X |

U.S. EPA Label Information

| Chemical name | FIFRA | FDA |
|-----------------|----------------------|-----------------|
| 1,2-Propanediol | 180.0910 180.0930 | 21 CFR 184.1666 |

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable

NFPA and HMIS Classifications

| NFPA | Health hazards - 0 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
|------|--------------------|------------------|----------------------|------------------------------------|
| HMIS | Health hazards - 0 | Flammability - 0 | Physical hazards - 0 | Personal protection - X -1 |

Key or legend to abbreviations and acronyms used in the safety data sheet

| | |
|-------------|---|
| ACGIH | ACGIH (American Conference of Governmental Industrial Hygienists) |
| ATSDR | ATSDR (Agency for Toxic Substances and Disease Registry) |
| CCRIS | CCRIS (Chemical Carcinogenesis Research Information System) |
| CDC | CDC (Center for Disease Control) |
| CEPA | CEPA (Canadian Environmental Protection Agency) |
| CICAD | CICAD (Concise International Chemical Assessment Documents) |
| ECHA | ECHA (The European Chemicals Agency) |
| EEA | EEA (European Environment Agency) |
| EPA | EPA (Environmental Protection Agency) |
| ERMA | ERMA (New Zealand's Environmental Risk Management Authority) |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™ |
| FDA | FDA (Food & Drug Administration) |
| GESTIS | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB | HSDB (Hazardous Substances Data Bank) |
| INERIS | INERIS (The National Industrial Environment and Risks Institute) |
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety) |
| IUCLID | IUCLID (The International Uniform Chemical Information Database) |
| NITE | Japan National Institute of Technology and Evaluation (NITE) |
| NIH | NIH (National Institutes of Health) |
| NIOSH | NIOSH (National Institute for Occupational Safety and Health) |
| LOLI | LOLI (List of Lists - An International Chemical Regulatory Database) |
| NDF | no data |
| NICNAS | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH | Immediately Dangerous to Life or Health |
| OSHA | OSHA (Occupational Safety and Health Administration of the US Department of Labor) |
| PEEN | PEEN (Pan European Ecological Network) |

Product Code(s) 2686901
Issue Date 07-Oct-2019
Version 3.9

Product Name Stabilized Sodium Thiosulfate 2.26 ± 0.01 N
Revision Date 26-Jan-2024
Page 12 / 12

RTECS RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE The Finnish Environment Institute (SYKE)
USDA USDA (United States Department of Agriculture)
USDC USDC (United States Department of Commerce)
WHO WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department

Issue Date 07-Oct-2019

Revision Date 26-Jan-2024

Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY©2023

End of Safety Data Sheet



Be Right™

SAFETY DATA SHEET

Issue Date 14-Jun-2021

Revision Date
23-Aug-2021

Version 4.1

Page 1 / 14

1. IDENTIFICATION

Product identifier

Product Name Potassium Iodide Powder Pillows

Other means of identification

Product Code(s) 2059996

Safety data sheet number M00030

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory reagent. Determination of chlorine, chromate, ozone.

Uses advised against Consumer use.

Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (repeated exposure)

Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



Hazard statements

EN / AGHS

Page 1 / 14

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 2 / 14

H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Family Mixture.
Chemical nature Mixture of inorganic salts.

Percent ranges are used where confidential product information is applicable.

| Chemical name | CAS No | Percent Range | HMRIC # |
|-----------------------|-----------|---------------|---------|
| Potassium iodide (KI) | 7681-11-0 | 90 - 100% | - |
| Silica, amorphous | 7631-86-9 | 1 - 5% | - |

4. FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.
Inhalation Remove to fresh air.
Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact Wash skin with soap and water.
Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

| | |
|---|--|
| Specific hazards arising from the chemical | No information available. |
| Hazardous combustion products | This material will not burn. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|--|--|---|--|
| Potassium iodide (KI) CAS#: 7681-11-0 | TWA: 0.01 ppm inhalable fraction and vapor | NDF | NDF |
| Silica, amorphous CAS#: 7631-86-9 | NDF | TWA: 50 µg/m ³ (vacated) TWA: 6 mg/m ³ TWA: 20 mppcf : | IDLH: 3000 mg/m ³ TWA: 6 mg/m ³ |

Appropriate engineering controls

Engineering Controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection No special protective equipment required.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance powder
Odor Odorless
Color white
Odor threshold Not applicable

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|-------------------|-------------------------|
| Molecular weight | Not applicable | |
| pH | 6.7 | 5% Solution |
| Melting point/freezing point | 680 °C / 1256 °F | |
| Boiling point / boiling range | No data available | |
| Evaporation rate | Not applicable | |
| Vapor pressure | Not applicable | |
| Relative vapor density | No data available | |
| Specific gravity (water = 1 / air = 1) | 3.07 | |
| Partition Coefficient (n-octanol/water) | No data available | |

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 5 / 14

Soil Organic Carbon-Water Partition Coefficient No data available
Autoignition temperature No data available
Decomposition temperature No data available
Dynamic viscosity Not applicable
Kinematic viscosity Not applicable

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| None reported | No information available | No data available | No information available |

Other information

Metal Corrosivity

Steel Corrosion Rate Not applicable
Aluminum Corrosion Rate Not applicable

Volatile Organic Compounds (VOC) Content

Not applicable

| <u>Chemical name</u> | <u>CAS No</u> | <u>Volatile organic compounds (VOC) content</u> | <u>CAA (Clean Air Act)</u> |
|-----------------------|---------------|---|----------------------------|
| Potassium iodide (KI) | 7681-11-0 | Not applicable | - |
| Silica, amorphous | 7631-86-9 | No data available | - |

Explosive properties

Upper explosion limit No data available
Lower explosion limit No data available

Flammable properties

Flash point Not applicable

Flammability Limit in Air

Upper flammability limit: No data available
Lower flammability limit: No data available

Oxidizing properties

No data available.

Bulk density

No data available

10. STABILITY AND REACTIVITY

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 6 / 14

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

Potassium oxide. Iodine. Iodine compounds.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation No known effect based on information supplied.

Eye contact No known effect based on information supplied.

Skin contact No known effect based on information supplied.

Ingestion No known effect based on information supplied.

Symptoms No information available.

Acute toxicity

Based on available data, the classification criteria are not met

Product Acute Toxicity Data

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|-------------------------|---------------|---------------|-----------------------|--|
| Potassium iodide (KI) (90 - 100%) CAS#: 7681-11-0 | Rat LD ₅₀ | 2779 mg/kg | None reported | None reported | RTECS (Registry of Toxic Effects of Chemical Substances) |

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|-------------------------------|--------------------------|
| ATEmix (oral) | No information available |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--|-------------------------|---------|---------------|---------------|--|---|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | Standard Draize Test | Rabbit | 500 mg | 24 hours | Not corrosive or irritating to skin | IUCLID (The International Uniform Chemical Information Database) |

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--|-------------------------|---------|---------------|---------------|-------------------|---|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | Standard Draize Test | Rabbit | 25 mg | 24 hours | Mild eye irritant | IUCLID (The International Uniform Chemical Information Database) |

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Product Sensitization Data

No data available.

Ingredient Sensitization Data

Test data reported below.

Skin Sensitization Exposure Route

| Chemical name | Test method | Species | Results | Key literature references and sources for data |
|--------------------------------------|-------------|---------|---------------------------------------|---|
| Potassium iodide (KI) (90 - 100%) | Patch test | Human | Not confirmed to be a skin sensitizer | ERMA (New Zealand's Environmental Risk Management Authority) |

| | | | | |
|--|---|------------|---------------------------------------|---|
| CAS#: 7681-11-0 | | | | |
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | OECD Test No. 406: Skin Sensitization | Guinea pig | Not confirmed to be a skin sensitizer | IUCLID (The International Uniform Chemical Information Database) |

STOT - single exposure

Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------------------|---------------|---------------|---|--|
| Potassium iodide (KI) (90 - 100%) CAS#: 7681-11-0 | Mouse LD _{Lo} | 1862 mg/kg | None reported | Lungs, Thorax, or Respiration Dyspnea | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | Rat LC _{Lo} | 5000 mg/kg | None reported | None reported | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Dust/Mist) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|---|--|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | Rat LC _{Lo} | 2.19 mg/L | 4 hours | Lungs, Thorax, or Respiration Dyspnea | RTECS (Registry of Toxic Effects of Chemical Substances) |

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Product Specific Target Organ Toxicity Repeat Dose Data

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------|---------------|---------------|-----------------------|--|
| Potassium iodide (KI) (90 - 100%) CAS#: 7681-11-0 | Rat NOAEL | 0.5 mg/kg | 90 days | None reported | ECHA (The European Chemicals Agency) |

Inhalation (Dust/Mist) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|--|--|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | Rat TC _{Lo} | 0.154 mg/L | 28 days | Lungs, Thorax, or Respiration Structural or functional change in trachea or bronchi | RTECS (Registry of Toxic Effects of Chemical Substances) |

Carcinogenicity

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 9 / 14

Based on available data, the classification criteria are not met.

Product Carcinogenicity Data

No data available.

Ingredient Carcinogenicity Data

No data available.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|-----------------------|-----------|-------|---------|-------|------|
| Potassium iodide (KI) | 7681-11-0 | - | - | - | - |
| Silica, amorphous | 7631-86-9 | - | Group 3 | Known | X |

Legend

| | |
|---|--|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Group 3 - Not classifiable as a human carcinogen |
| NTP (National Toxicology Program) | Does not apply |
| OSHA (Occupational Safety and Health Administration of the US Department of Labor) | Does not apply |

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Product Germ Cell Mutagenicity invitro Data

No data available.

Ingredient Germ Cell Mutagenicity invitro Data

Test data reported below.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|----------------------|-------------------|---------------|---------------|---------------------------------------|--|
| Potassium iodide (KI) (90 - 100%) CAS#: 7681-11-0 | Cytogenetic analysis | Rat ascites tumor | 500 mg/kg | None reported | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |

Product Germ Cell Mutagenicity invivo Data

No data available.

Ingredient Germ Cell Mutagenicity invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data

No data available.

Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|------------------------|---------------|---------------|--|--|
| Potassium iodide (KI) (90 - 100%) CAS#: 7681-11-0 | Human TD _{Lo} | 2700 mg/kg | 39 weeks | Specific Developmental Abnormalities Endocrine System | RTECS (Registry of Toxic Effects of Chemical Substances) |

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Product Ecological Data

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Ingredient Ecological Data

Aquatic Acute Toxicity

Test data reported below.

Fish

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|--------------------------|------------------|---------------|--|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | 96 hours | <i>Brachydanio rerio</i> | LC ₅₀ | 5000 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Crustacea

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|---------------------------|------------------|---------------|--|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | 48 Hours | <i>Ceriodaphnia dubia</i> | EC ₅₀ | 7600 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Algae

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------------------|------------------|---------------|--|
| Silica, amorphous (1 - 5%) CAS#: 7631-86-9 | 72 Hours | <i>Selenastrum capricornutum</i> | EC ₅₀ | 440 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Product Biodegradability Data

No data available.

Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE

Product Bioaccumulation Data

No data available.

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 11 / 14

Partition Coefficient (n-octanol/water) No data available

Mobility

Soil Organic Carbon-Water Partition Coefficient No data available

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number Not applicable

Special instructions for disposal Dilute material with excess water making a weaker than 5% solution. Open cold water tap completely, slowly pour the material to the drain.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies

DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies

ENCS Complies

IECSC Complies

KECL - Existing substances Complies

PICCS Complies

TCSI Complies

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 12 / 14

AICS Complies
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute health hazard | Yes |
| Chronic Health Hazard | Yes |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

| Chemical name | California Proposition 65 |
|--------------------------------------|----------------------------------|
| Silica, amorphous (CAS #: 7631-86-9) | Carcinogen |



WARNING: This product can expose you to chemicals including Silica, amorphous, which is known to the State of California to cause cancer.

For more information, go to <http://www.P65Warnings.ca.gov>

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|--------------------------------|-------------------|----------------------|---------------------|
| Silica, amorphous 7631-86-9 | - | X | X |

U.S. EPA Label Information

Product Code(s) 2059996
 Issue Date 14-Jun-2021
 Version 4.1

Product Name Potassium Iodide Powder Pillows
 Revision Date 23-Aug-2021
 Page 13 / 14

| Chemical name | FIFRA | FDA |
|-----------------------|----------|-----------------|
| Potassium iodide (KI) | 180.0940 | 21 CFR 184.1634 |
| Silica, amorphous | 180.0930 | - |

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable

NFPA and HMIS Classifications

| | | | | |
|------|---------------------|------------------|----------------------|------------------------------------|
| NFPA | Health hazards - 0 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
| HMIS | Health hazards - 1* | Flammability - 0 | Physical hazards - 0 | Personal protection - X -1 |

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH *Immediately Dangerous to Life or Health*
 ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)
 NDF *no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

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Revision Date 23-Aug-2021

Revision Note None

Disclaimer

Product Code(s) 2059996
Issue Date 14-Jun-2021
Version 4.1

Product Name Potassium Iodide Powder Pillows
Revision Date 23-Aug-2021
Page 14 / 14

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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End of Safety Data Sheet