



Be Right™

SAFETY DATA SHEET

Issue Date 18-07-2019

Revision Date 26-Jan-2024

Version 1.6

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1. IDENTIFICATION

Product identifier

Product Name Silver 1 Reagent Powder Pillows

Other means of identification

Product Code(s) 2293566

Safety data sheet number M00171

Recommended use of the chemical and restrictions on use

Recommended Use Determination of silver. Water Analysis.

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 2
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



Hazard statements

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H360 - May damage fertility or the unborn child

Precautionary statements

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical attention
P362 - Take off contaminated clothing and wash before reuse
P280 - Wear protective gloves, protective clothing, eye protection, and face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical attention
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
P312 - Call a POISON CENTER or doctor if you feel unwell
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards Known

May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Family Mixture.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
Boron potassium oxide (B4K2O7)	1332-77-0	50 - 60%	-
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)	63451-33-2	30 - 40%	-
Citric acid	77-92-9	1 - 5%	-
1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]-	6708-61-8	<0.1%	-

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. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing.

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 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	May emit acrid smoke and fumes. Potassium oxides. Sodium oxides. Boron compounds. Carbon monoxide, Carbon dioxide. Nitrogen 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 Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

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.

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. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Store locked up. 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
Boron potassium oxide (B4K2O7) CAS#: 1332-77-0	STEL: 6 mg/m ³ inhalable particulate matter TWA: 2 mg/m ³ inhalable particulate matter	NDF	NDF

Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems.
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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. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.
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Hand Protection	Wear suitable gloves. Impervious 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.
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Eye/face protection	If splashes are likely to occur, wear safety glasses with side-shields.
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Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Avoid contact with eyes, skin and
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clothing.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

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	Color	light yellow
Appearance	powder	Odor threshold	No data available
Odor	Odorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	9.63	5% @ 20°C
Melting point / freezing point	> 360 °C / 680 °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	1.729	
Partition coefficient	log K _{ow} ~ -0.18	
Soil Organic Carbon-Water Partition Coefficient	log K _{oc} ~ 0.05	
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>
Slightly soluble	> 0.1 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>
Acid	Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

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Other information

Metal Corrosivity

Steel Corrosion Rate
Aluminum Corrosion Rate

No data available
3.51 mm/yr / 0.14 in/yr

Volatile Organic Compounds (VOC) Content

Not applicable

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Boron potassium oxide (B4K2O7)	1332-77-0	No data available	-
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	63451-33-2	No data available	-
Citric acid	77-92-9	Not applicable	-
1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]-	6708-61-8	Not applicable	-

Explosive properties

Upper explosion limit
Lower explosion limit

No data available
No data available

Flammable properties

Flash point

Not applicable

Flammability Limit in Air

Upper flammability limit:
Lower flammability limit:

No data available
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 acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Sodium oxides. Potassium oxide. Carbon dioxide. Carbon monoxide. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation May cause irritation of respiratory tract.
Eye contact Irritating to eyes. Causes serious eye irritation.
Skin contact Causes skin irritation.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms Redness. May cause redness and tearing of the eyes.

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
Boron potassium oxide (B4K2O7) (50 - 60%) CAS#: 1332-77-0	Rat LD ₅₀	3500 mg/kg	None reported	None reported	Vendor SDS
Citric acid (1 - 5%) CAS#: 77-92-9	Rat LD ₅₀	3000 mg/kg	None reported	None reported	IUCLID
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Boron potassium oxide (B4K2O7) (50 - 60%) CAS#: 1332-77-0	Rat LD ₅₀	> 2000 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)

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

ATEmix (oral)	No information available mg/kg
ATEmix (dermal)	4,522.00 mg/kg
ATEmix (inhalation-dust/mist)	No information available

ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation

Classification based on data available for ingredients. Irritating to skin.

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
Boron potassium oxide (B4K2O7) (50 - 60%) CAS#: 1332-77-0	Standard Draize Test	Rabbit	500 mg	4 hours	Skin irritant	ECHA
Citric acid (1 - 5%) CAS#: 77-92-9	Standard Draize Test	Rabbit	500 mg	24 hours	Mild skin irritant	RTECS
1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]- (<0.1%) CAS#: 6708-61-8	QSAR (Quantitative Structure Activity Relationship Models)	None reported	None reported	None reported	Not corrosive or irritating to skin	Toxtree (Ideaconult, Ltd)

Serious eye damage/irritation

Classification based on data available for ingredients. Irritating 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
Boron potassium oxide (B4K2O7) (50 - 60%) CAS#: 1332-77-0	OECD Test 405: Acute Eye Corrosion/Irritation	Rabbit	100 mg	24 hours	Eye irritant	ECHA
Glycine, N,N-1,2-cyclohexane diylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2) (30 - 40%) CAS#: 63451-33-2	None reported	None reported	None reported	None reported	Eye irritant	Based on similiar substance
Citric acid (1 - 5%) CAS#: 77-92-9	Standard Draize Test	Rabbit	0.750 mg	24 hours	Eye irritant	RTECS
1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]- (<0.1%) CAS#: 6708-61-8	QSAR (Quantitative Structure Activity Relationship Models)	None reported	None reported	None reported	Not corrosive or irritating to eyes	Toxtree (Ideaconult, Ltd)

Respiratory or skin sensitization

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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.

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.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Boron potassium oxide (B4K2O7)	1332-77-0	-	-	-	-
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)	63451-33-2	-	-	-	-
Citric acid	77-92-9	-	-	-	-
1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]-	6708-61-8	-	-	-	-

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

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]-	QSAR (Quantitative Structure Activity	None reported	None reported	Potential cancer hazard	Toxtree (Ideaconult, Ltd)

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(<0.1%) CAS#: 6708-61-8	Relationship Models)				
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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-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]- (<0.1%) CAS#: 6708-61-8	QSAR (Quantitative Structure Activity Relationship Models)	<i>Salmonella typhimurium</i>	None reported	None reported	Positive test result for mutagenicity	Toxtree (Ideaconult, Ltd)

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

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
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Glycine, N,N-1,2-cyclohexane diylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2) (30 - 40%) CAS#: 63451-33-2	96 hours	None reported	LC ₅₀	356000 mg/L	ECOSARS
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glycine, N,N-1,2-cyclohexane diylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2) (30 - 40%) CAS#: 63451-33-2	48 Hours	None reported	EC ₅₀	26162 mg/L	ECOSARS
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glycine, N,N-1,2-cyclohexane diylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2) (30 - 40%) CAS#: 63451-33-2	96 hours	None reported	EC ₅₀	56103 mg/L	ECOSARS

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Mixture

No data available.

Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE

Mixture

No data available.

Partition coefficient

log K_{ow} ~ -0.18

Mobility

Soil Organic Carbon-Water Partition Coefficient

log K_{oc} ~ 0.05

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

Working in small batches, dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. If permitted by regulation. Open cold

water tap completely, slowly pour the reacted material to the drain. 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
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	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Does not comply
TCSI	Complies
AICS	Does not comply
NZIoC	Does not comply

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

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Sudden release of pressure hazard
Reactive Hazard

No
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
Boron potassium oxide (B4K2O7) 1332-77-0	X	-	-

U.S. EPA Label Information

Chemical name	FIFRA	FDA
Boron potassium oxide (B4K2O7)	180.1121	-
Citric acid	180.0950	21 CFR 184.1033

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 Thersholds
Boron potassium oxide (B4K2O7) 1332-77-0	Declarable Substance (FI)	1 % 0.1 %

NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 2 - *	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
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Revision Note	None

Disclaimer

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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

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1. IDENTIFICATION

Product identifier

Product Name Silver 2 Reagent Solution Pillows

Other means of identification

Product Code(s) 2293666

Safety data sheet number M00161

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use. Determination of silver.

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)

Flammable liquids	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



Hazard statements

H227 - Combustible liquid
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H360 - May damage fertility or the unborn child

Precautionary statements

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical attention
P362 - Take off contaminated clothing and wash before reuse
P280 - Wear protective gloves, protective clothing, eye protection, and face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical attention
P201 - Obtain special instructions before use
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
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
P312 - Call a POISON CENTER or doctor if you feel unwell
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P403 + P235 - Store in a well-ventilated place. Keep cool

Other Hazards Known

May be harmful if swallowed
May be harmful in contact with skin

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-Methyl-2-pyrrolidone	872-50-4	70 - 80%	-
Polyoxyethylene sorbitan monolaurate	9005-64-5	20 - 30%	-

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. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
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 medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
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.

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 Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO ₂). Water spray. Alcohol resistant foam.
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.
Hazardous combustion products	May emit toxic and corrosive fumes. Nitrogen oxides. Carbon monoxide, Carbon dioxide.
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 Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing.

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

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. 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 Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store locked up. Store in accordance with particular national and local regulations.

Flammability class Class IIIA

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. 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	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Avoid contact with eyes, skin and clothing.
General Hygiene Considerations	Do not eat, drink or smoke when using this product. 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. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.
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
Odor	Mild amine
Color	yellow
Odor threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	10.0	@ 20 °C
Melting point / freezing point	No data available	
Initial boiling point and boiling range	185 °C / 365 °F	
Evaporation rate	0.08 (water = 1)	
Vapor pressure	0.75 mm Hg / 0.1 kPa at 20 °C / 68 °F	
Relative vapor density	No data available	
Specific gravity - VALUE 1	1.10	
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

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<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>
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

<u>Chemical name</u>	<u>CAS No</u>	<u>Volatile organic compounds (VOC) content</u>	<u>CAA (Clean Air Act)</u>
1-Methyl-2-pyrrolidone	872-50-4	No data available	-
Polyoxyethylene sorbitan monolaurate	9005-64-5	No data available	-

Explosive properties

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

Flammable properties

Flash point 88 °C / 190.4 °F
Method CC (closed cup)

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

Heat, flames and sparks.

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes. Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms Redness. May cause redness and tearing of the eyes.

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

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Rat LD ₅₀	3598 mg/kg	None reported	None reported	IUCLID
Polyoxyethylene sorbitan monolaurate (20 - 30%) CAS#: 9005-64-5	Rat LD ₅₀	36700 mg/kg	None reported	None reported	RTECS

Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Rat LD ₅₀	2500 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
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Rat LC ₅₀	> 5.1 mg/L	4 hours	None reported	IUCLID

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)	4,790.30 mg/kg
ATEmix (dermal)	3,328.50 mg/kg
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation

Classification based on data available for ingredients. Irritating to skin.

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
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Standard Draize Test	Rabbit	None reported	None reported	Mild skin irritant	ECHA
Polyoxyethylene sorbitan monolaurate (20 - 30%) CAS#: 9005-64-5	Standard Draize Test	Human	15 mg	72 hours	Mild skin irritant	RTECS

Serious eye damage/irritation

Classification based on data available for ingredients. Irritating to eyes.

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
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Standard Draize Test	Rabbit	100 mg	None reported	Eye irritant	RTECS
Polyoxyethylene sorbitan monolaurate (20 - 30%)	Standard Draize Test	Rabbit	0.1 mL	2 seconds	Not corrosive or irritating to eyes	ECHA

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CAS#: 9005-64-5						
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Respiratory or skin sensitization

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

Mixture

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
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Patch test	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID

STOT - single exposure

May cause respiratory irritation.

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.

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
1-Methyl-2-pyrrolidone	872-50-4	-	-	-	-
Polyoxyethylene sorbitan monolaurate	9005-64-5	-	-	-	-

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.

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Mixture invitro Data
No data available.

Substance invitro Data
Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Polyoxyethylene sorbitan monolaurate (20 - 30%) CAS#: 9005-64-5	Mutation in microorganisms	Mammalian cells - not specified	None reported	None reported	Negative	Vendor SDS

Mixture in vivo Data
No data available.

Substance in vivo Data
No data available.

Reproductive toxicity

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Mixture
No data available.

Ingredient Reproductive Toxicity Data
Test data reported below.

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	Rat TD _{Lo}	150 mg/L	13 days	Effects on Newborn Delayed effects Growth statistics (e.g. stunted fetus)	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

Aquatic Acute Toxicity

Test data reported below.

Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	96 hours	<i>Lepomis macrochirus</i>	LC ₅₀	832 mg/L	IUCLID
Polyoxyethylene sorbitan monolaurate (20 - 30%) CAS#: 9005-64-5	96 hours	<i>Salmo gairdneri</i>	LC ₅₀	216 mg/L	EPA

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	48 Hours	<i>Daphnia magna</i>	EC ₅₀	4897 mg/L	IUCLID
Polyoxyethylene sorbitan monolaurate (20 - 30%) CAS#: 9005-64-5	48 Hours	<i>Artemia monica</i>	LC ₅₀	1089.6 mg/L	Vendor SDS

Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
1-Methyl-2-pyrrolidone (70 - 80%) CAS#: 872-50-4	72 Hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	> 500 mg/L	IUCLID

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Mixture

No data available.

Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE

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

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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 Incinerate material at an E.P.A. approved hazardous waste facility.

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

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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 %
1-Methyl-2-pyrrolidone (CAS #: 872-50-4)	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
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
1-Methyl-2-pyrrolidone (CAS #: 872-50-4)	Developmental



WARNING: This product can expose you to chemicals including 1-Methyl-2-pyrrolidone, which is known to the State of California to cause birth defects or other reproductive harm.
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
1-Methyl-2-pyrrolidone 872-50-4	X	X	X

U.S. EPA Label Information

Chemical name	FIFRA	FDA
1-Methyl-2-pyrrolidone	180.0920	-

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 Thersholds
1-Methyl-2-pyrrolidone 872-50-4	Prohibited Substance (LR) Declarable Substance (LR)	0.3 %

NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 2	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 2 - *	Flammability - 2	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 Zealands 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

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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.

HACH COMPANY©2023

End of Safety Data Sheet



Be Right™

SAFETY DATA SHEET

Issue Date 16-Sep-2021

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1. IDENTIFICATION

Product identifier

Product Name Sodium Thiosulfate

Other means of identification

Product Code(s) 2293766

Safety data sheet number M00278

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use.

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

Substance

Chemical Name	Sodium Thiosulfate
Chemical Family	Reducing agent.
Formula	Na ₂ S ₂ O ₃
CAS No	7772-98-7
Alternate CAS Number	10102-17-7 - Pentahydrate
Chemical nature	Inorganic Compound.

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.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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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	Sulfur oxides. Sodium oxides. Carbon 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.
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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 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.

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.

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Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	158.13 g/mole	
pH	6.5 - 8	5% Solution
Melting point / freezing point	52 °C / 125.6 °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	1.74	
Partition coefficient	No data available	
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>
Completely soluble	701000 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 No data available
Aluminum Corrosion Rate No data available

Volatile Organic Compounds (VOC) Content

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

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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

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

Toxic fumes of sulfur oxides. Sodium oxides. Carbon oxides.

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.

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Symptoms No information available.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

If available, see ingredient data below.

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

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

If available, see ingredient data below.

Ingredient Skin Corrosion/Irritation Data

No data available.

Serious eye damage/irritation

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

Mixture

If available, see ingredient data below.

Ingredient Eye Damage/Eye Irritation Data

No data available.

Respiratory or skin sensitization

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

Mixture

If available, see ingredient data below.

Ingredient Sensitization Data

No data available.

STOT - single exposure

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

Mixture

If available, see ingredient data below.

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

If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

Carcinogenicity

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

Mixture

If available, see ingredient data below.

Ingredient Carcinogenicity Data

No data available.

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

If available, see ingredient data below.

Substance invitro Data

No data available.

Mixture invivo Data

If available, see ingredient data below.

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

If available, see ingredient data below.

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Aquatic Chronic Toxicity

If available, see ingredient data below.

Substance

Aquatic Acute Toxicity

Test data reported below.

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Mixture

No data available.

Mixture

No data available.

Partition coefficient

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

Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.

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.

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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

California Proposition 65

This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

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 - 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
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)

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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 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