



Be Right™

SAFETY DATA SHEET

Issue Date 30-01-2020

Revision Date 26-Jan-2024

Version 3.4

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1. IDENTIFICATION

Product identifier

Product Name Magnesium Sulfate Solution 10000 ±1000 mg/L as CaCO₃

Other means of identification

Product Code(s) 102233

Safety data sheet number M00355

Recommended use of the chemical and restrictions on use

Recommended Use Standard solution. Hardness determination. 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 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

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Substance

Not applicable

Mixture

Chemical Family Mixture.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
Magnesium sulfate	7487-88-9	1 - 5%	-
Diethanolamine	111-42-2	<1%	-
Formaldehyde	50-00-0	<0.1%	-
Sulfuric acid	7664-93-9	<0.1%	-
Methanol	67-56-1	<0.1%	-
Glutaraldehyde	111-30-8	<0.01%	-

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.

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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

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Diethanolamine CAS#: 111-42-2	TWA: 1 mg/m ³ inhalable fraction and vapor S*	(vacated) TWA: 3 ppm (vacated) TWA: 15 mg/m ³	TWA: 3 ppm TWA: 15 mg/m ³
Formaldehyde CAS#: 50-00-0	dermal sensitizer; respiratory sensitizer STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm (vacated) STEL: 10 ppm (vacated) Ceiling: 5 ppm STEL: 2 ppm	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm
Sulfuric acid CAS#: 7664-93-9	TWA: 0.2 mg/m ³ thoracic particulate matter	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³

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Methanol CAS#: 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m ³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m ³ (vacated) SKN*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³
Glutaraldehyde CAS#: 111-30-8	dermal sensitizer;respiratory sensitizer Ceiling: 0.05 ppm activated or unactivated	(vacated) Ceiling: 0.2 ppm (vacated) Ceiling: 0.8 mg/m ³	Ceiling: 0.2 ppm Ceiling: 0.8 mg/m ³

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.

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	aqueous solution	Odor threshold	No data available
Odor	Odorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	9.4	@ 20 °C
Melting point / freezing point	~ -2 °C / 28.4 °F	
Initial boiling point and boiling range	~ 100 °C / 212 °F	

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Evaporation rate 0.99 (water = 1)
Vapor pressure 24.002 mm Hg / 3.2 kPa at 25 °C / 77 °F
Relative vapor density 0.62
Specific gravity - VALUE 1 0.998
Partition coefficient Not applicable
Soil Organic Carbon-Water Partition Coefficient Not applicable
Autoignition temperature No data available
Decomposition temperature No data available
Dynamic viscosity ~ 0.998 cP (mPa s) at 20 °C / 68 °F
Kinematic viscosity ~ 1 cSt (mm²/s) at 20 °C / 68 °F

Solubility(ies)

Water solubility

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

Solubility in other solvents

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

See ingredients information below

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Magnesium sulfate	7487-88-9	No data available	-
Diethanolamine	111-42-2	No data available	X
Formaldehyde	50-00-0	No data available	X
Sulfuric acid	7664-93-9	No data available	-
Methanol	67-56-1	100%	X
Glutaraldehyde	111-30-8	100%	-

Explosive properties

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

Flammable properties

Flash point No data available

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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.

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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
Diethanolamine (<1%) CAS#: 111-42-2	Rat LD ₅₀	680 mg/kg	None reported	None reported	GESTIS
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat LD ₅₀	100 mg/kg	None reported	None reported	GESTIS
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat LD ₅₀	134 mg/kg	None reported	None reported	GESTIS

Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Diethanolamine (<1%) CAS#: 111-42-2	Rat LD ₅₀	8380 mg/kg	None reported	None reported	GESTIS
Formaldehyde (<0.1%) CAS#: 50-00-0	Rabbit LD ₅₀	270 mg/kg	None reported	None reported	GESTIS

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat LC ₅₀	0.578 mg/L	4 hours	None reported	LOLI
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat LC ₅₀	0.39 mg/L	4 hours	None reported	ECHA

Inhalation (Vapor) Exposure Route

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.

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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
Diethanolamine (<1%) CAS#: 111-42-2	Open Irritation Test	Rabbit	50 mg	None reported	Skin irritant	RTECS
Formaldehyde (<0.1%) CAS#: 50-00-0	Standard Draize Test	Human	0.150 mg	72 hours	Corrosive to skin	RTECS
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB
Methanol (<0.1%) CAS#: 67-56-1	OECD Test 439: In Vitro Skin Irritation: Reconstructed Human Epidermis (Rhe) Test Method	Rabbit	None reported	20 hours	Not corrosive or irritating to skin	ECHA
Glutaraldehyde (<0.01%) CAS#: 111-30-8	OECD Test 404: Acute Dermal Corrosion/Irritation	Rabbit	0.5 mL	4 hours	Corrosive to skin	ECHA

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
Diethanolamine (<1%) CAS#: 111-42-2	Standard Draize Test	Rabbit	5500 mg	None reported	Corrosive to eyes	RTECS
Formaldehyde (<0.1%) CAS#: 50-00-0	Rinse Test	Human	1 ppm	6 minutes	Corrosive to eyes	RTECS
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB
Methanol (<0.1%) CAS#: 67-56-1	OECD Test 439: In Vitro Skin Irritation: Reconstructed Human Epidermis (Rhe) Test Method	Rabbit	0.05 mL	24 hours	Not corrosive or irritating to eyes	ECHA
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Standard Draize Test	Rabbit	0.1 mL	24 hours	Corrosive to eyes	ECHA

Respiratory or skin sensitization

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

Mixture

No data available.

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Ingredient Sensitization Data

Test data reported below.

Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Patch test	Human	Confirmed to be a skin sensitizer	ERMA
Methanol (<0.1%) CAS#: 67-56-1	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	ECHA
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Open Epicutaneous Test	Guinea pig	Confirmed to be a skin sensitizer	ECHA

Respiratory Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	IgE Specific Immune Response Test	Guinea pig	Confirmed to be a respiratory sensitizer	CICAD
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Based on human experience	Human	Confirmed to be a respiratory sensitizer	NITE

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

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Human LD _{Lo}	70 mg/kg	None reported	Gastrointestinal Kidney, Ureter, or Bladder Liver Other changes Ulcerated stomach Other changes	RTECS
Methanol (<0.1%) CAS#: 67-56-1	Human LD _{Lo}	143 mg/kg	None reported	Lungs, Thorax, or Respiration Dyspnea	RTECS

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Human TD _{Lo}	0.144 mg/L	5 minutes	Lungs, Thorax, or Respiration Dyspnea	RTECS
Methanol	Human	300 mg/L	None reported	Lungs, Thorax, or	RTECS

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(<0.1%) CAS#: 67-56-1	TC _{Lo}			Respiration Other changes	
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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

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol (<0.1%) CAS#: 67-56-1	Monkey	2340 mg/kg	3 days	None reported	ECHA
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat NOAEL	29.9 mg/kg	90 days	Nutritional and Gross Metabolic Weight loss or decreased weight gain	ECHA

Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat NOAEL	150 mg/kg	90 days	No toxicological effects observed	ECHA

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Human TC _{Lo}	0.017 mg/L	0.5 days	Eye Lungs, Thorax, or Respiration Lacrimation Other changes	RTECS
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Human TC _{Lo}	0.003 mg/L	168 days	Musculoskeletal Changes in teeth and supporting structures	RTECS
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat NOAEC	0.125 mg/L	730 days	Nutritional and Gross Metabolic Weight loss or decreased weight gain	ECHA

Carcinogenicity

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

Mixture

No data available.

Ingredient Carcinogenicity Data

Test data reported below.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Magnesium sulfate	7487-88-9	-	-	-	-

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Diethanolamine	111-42-2	A3	Group 2B	-	X
Formaldehyde	50-00-0	A1	Group 1	Known	X
Sulfuric acid	7664-93-9	A2	Group 1	Known	X
Methanol	67-56-1	-	-	-	-
Glutaraldehyde	111-30-8	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)	Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)	Does not apply
OSHA	X - Present

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat TD _{Lo}	2912 mg/kg	2 years	Blood Leukemia	RTECS

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat	15 mg/L	78 weeks	Olfaction Tumors	RTECS

Germ cell mutagenicity

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

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
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available
Methanol (<0.1%) CAS#: 67-56-1	DNA inhibition	Human lymphocyte	300 mmol/L	None reported	Positive test result for mutagenicity	RTECS
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Mutation in microorganisms	<i>Salmonella typhimurium</i>	5 mg/plate	None reported	Positive test result for mutagenicity	ECHA

Mixture in vivo Data

No data available.

Substance in vivo Data

Test data reported below.

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Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Methanol (<0.1%) CAS#: 67-56-1	DNA damage	Rat	0.405 mg/kg	None reported	Positive test result for mutagenicity	RTECS

Inhalation (Vapor) Exposure Route

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Micronucleus test	Human	.000985 mg/L	8.5 years	Positive test result for mutagenicity	RTECS

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
Methanol (<0.1%) CAS#: 67-56-1	Rat TD _{Lo}	4118 mg/kg	10 days	Effects on Embryo or Fetus Specific Developmental Abnormalities Ear Eye Fetotoxicity (except death e.g. stunted fetus) Urogenital System	RTECS
Glutaraldehyde (<0.01%) CAS#: 111-30-8	Rat NOAEL	500 ppm	Multiple generations	No reproductive or developmental toxic effects observed	ECHA

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol (<0.1%) CAS#: 67-56-1	Rat TC _{Lo}	0.0026 mg/L	22 days	Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus)	RTECS

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat TC _{Lo}	40 mg/L	14 days	Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus)	RTECS
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Rabbit TC _{Lo}	0.02 mg/L	7 hours	Specific Developmental Abnormalities Musculoskeletal system	No information available

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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
Magnesium sulfate (1 - 5%) CAS#: 7487-88-9	96 hours	<i>Gambusia affinis</i>	LC ₅₀	15500 mg/L	IUCLID
Formaldehyde (<0.1%) CAS#: 50-00-0	96 hours	<i>Morone saxatilis</i>	LC ₅₀	6.7 mg/L	PEEN
Glutaraldehyde (<0.01%) CAS#: 111-30-8	96 hours	None reported	LC ₅₀	3.5 mg/L	GESTIS

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Diethanolamine (<1%) CAS#: 111-42-2	48 Hours	<i>Ceriodaphnia dubia</i>	EC ₅₀	28.8 mg/L	ERMA
Formaldehyde (<0.1%) CAS#: 50-00-0	48 Hours	<i>Daphnia pulex</i>	EC ₅₀	5.8 mg/L	PEEN
Glutaraldehyde (<0.01%) CAS#: 111-30-8	48 Hours	None reported	EC ₅₀	0.75 mg/L	GESTIS

Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium sulfate (1 - 5%) CAS#: 7487-88-9	72 Hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	2700 mg/L	IUCLID
Diethanolamine	72 Hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	7.8 mg/L	ERMA

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(<1%) CAS#: 111-42-2					
Glutaraldehyde (<0.01%) CAS#: 111-30-8	72 Hours	<i>Scenedemus subspicatus</i>	EC ₅₀	0.6 mg/L	ECHA

Aquatic Chronic Toxicity

Test data reported below.

Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glutaraldehyde (<0.01%) CAS#: 111-30-8	None reported	<i>Scenedemus subspicatus</i>	NOEC	< 0.0391 mg/L	ECHA

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

U122 U154

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Formaldehyde 50-00-0	U122	Included in waste streams: K009, K010, K038, K040, K156, K157	-	U122
Methanol 67-56-1	-	Included in waste stream: F039	-	U154

Special instructions for disposal

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. 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.

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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

Chemical name	SARA 313 - Threshold Values %
Diethanolamine (CAS #: 111-42-2)	1.0
Formaldehyde (CAS #: 50-00-0)	0.1
Sulfuric acid (CAS #: 7664-93-9)	1.0
Methanol (CAS #: 67-56-1)	1.0

SARA 311/312 Hazard Categories

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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)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Formaldehyde 50-00-0	100 lb	-	-	X
Sulfuric acid 7664-93-9	1000 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)
Diethanolamine 111-42-2	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ
Formaldehyde 50-00-0	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Methanol 67-56-1	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
Formaldehyde (<0.1%) CAS#: 50-00-0	Release - Toxic (solution)

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
Sulfuric acid (<0.1%) CAS#: 7664-93-9	Not Listed	50 gallon Export Volume (exports, transshipments and international transactions to designated countries given in 1310.08(b))

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Diethanolamine (CAS #: 111-42-2)	Carcinogen
Formaldehyde (CAS #: 50-00-0)	Carcinogen
Sulfuric acid (CAS #: 7664-93-9)	Carcinogen
Methanol (CAS #: 67-56-1)	Developmental

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WARNING: This product can expose you to chemicals including Diethanolamine, Formaldehyde, Methanol, Sulfuric acid, which are known to the State of California to cause cancer or birth defects or 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
Diethanolamine 111-42-2	X	X	X
Formaldehyde 50-00-0	X	X	X
Sulfuric acid 7664-93-9	X	X	X
Methanol 67-56-1	X	X	X
Glutaraldehyde 111-30-8	X	X	X

U.S. EPA Label Information

Chemical name	FIFRA	FDA
Magnesium sulfate	-	21 CFR 184.1443
Diethanolamine	180.0920	-
Sulfuric acid	180.0910	21 CFR 184.1095
Methanol	180.0910	-

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
Magnesium sulfate 7487-88-9	Declarable Substance (FI)	1 % 0.1 %
Diethanolamine 111-42-2	Declarable Substance (FI)	0.1 %
Formaldehyde 50-00-0	Prohibited Substance (FI) Prohibited Substance (LR) Declarable Substance (LR) Declarable Substance (FI)	0.1 %
Methanol 67-56-1	Declarable Substance (FI) Declarable Substance (LR) Prohibited Substance (FI) Prohibited Substance (LR)	0.6 %
Glutaraldehyde 111-30-8	Declarable Substance (LR) Prohibited Substance (LR)	0.1 %

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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)

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

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C Carcinogen
M Mutagen

R Reproductive toxicant

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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