

Oxalic Acid, Dihydrate

Safety Data Sheet

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

Date of issue: 5/1/2015

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

1.1. Product identifier

Product form : Substance
 Substance name : Oxalic Acid, Dihydrate
 CAS No : 6153-56-6
 Product code : LC18040
 Formula : C₂H₂O₄.2H₂O
 Synonyms : dicarboxylic acid C2, dihydrate / dicarboxylic acid, dihydrate / ethandionic acid, dihydrate / ethanedioic acid, dihydrate / oxiric acid, dihydrate
 BIG no : 16184

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Textile
 Cleansing product: component
 Leather/fur: dyeing
 Reagent

1.3. Details of the supplier of the safety data sheet

Global Chemical Resources
 1925 Nebraska Avenue
 Toledo, OH 43607
 T 419-242-1004

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Corr. 1B H314
 Eye Dam. 1 H318

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger
 Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
 Precautionary statements (GHS-US) : P260 - Do not breathe dust
 P264 - Wash exposed skin thoroughly after handling
 P280 - Wear protective gloves, protective clothing, eye protection, face protection
 P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
 P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER/doctor/...
 P363 - Wash contaminated clothing before reuse
 P405 - Store locked up
 P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

No data available

Oxalic Acid, Dihydrate

Safety Data Sheet

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

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Oxalic Acid, Dihydrate (Main constituent)	(CAS No) 6153-56-6	100	Skin Corr. 1B, H314 Eye Dam. 1, H318

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Doctor: gastric lavage is not recommended.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Vomiting.
- Symptoms/injuries after skin contact : Tingling/irritation of the skin. FOLLOWING SYMPTOMS MAY APPEAR LATER: May stain the skin. Discolouration of the (finger)nails.
- Symptoms/injuries after eye contact : Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue. Permanent eye damage.
- Symptoms/injuries after ingestion : AFTER ABSORPTION OF HIGH QUANTITIES: Burns to the gastric/intestinal mucosa. Nausea. Blood in vomit. Blood in stool. Shock. FOLLOWING SYMPTOMS MAY APPEAR LATER: Decreased renal function. Change in urine output. Change in urine composition.
- Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Decreased renal function. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Coughing. Skin rash/inflammation.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Preferably: water spray. Polyvalent foam. Alcohol-resistant foam. ABC powder. Carbon dioxide.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Non-flammable. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD. Heating increases the fire hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : DIRECT EXPLOSION HAZARD. Its dust is explosive with air. INDIRECT EXPLOSION HAZARD. Dust cloud can be ignited by a spark. Reactions with explosion hazards: see "Reactivity Hazard".
- Reactivity : On heating: release of corrosive gases/vapours (formic acid). Upon combustion: CO and CO₂ are formed. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) bases: release of heat. Decomposes on exposure to UV light: release of corrosive gases/vapours (formic acid).

5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

Oxalic Acid, Dihydrate

Safety Data Sheet

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows. Dust production: stop engines and no smoking. In case of dust production: no naked flames or sparks. Dust: spark-/explosionproof appliances/lighting equipment.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area. Stop release.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Powdered form: no compressed air for pumping over spills.
- Methods for cleaning up : Stop dust cloud by humidifying. Neutralize spill with quicklime or soda ash. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Powdered: do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Use corrosionproof equipment. Thoroughly clean/dry the installation before use. Powdered form: no compressed air for pumping over. Avoid raising dust. Keep away from naked flames/heat. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Protect from moisture. Keep container closed when not in use.
- Incompatible products : Strong bases. metals. Acid chlorides.
- Incompatible materials : Heat sources.
- Storage temperature : 20 °C
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. (strong) acids. (strong) bases. water/moisture.
- Storage area : Store at ambient temperature. Store in a dry area. Store in a dark area. Keep container in a well-ventilated place. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: synthetic material. MATERIAL TO AVOID: iron.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Oxalic Acid, Dihydrate (6153-56-6)		
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³
USA ACGIH	ACGIH STEL (mg/m ³)	2 mg/m ³

Oxalic Acid, Dihydrate

Safety Data Sheet

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

Oxalic Acid, Dihydrate (6153-56-6)

USA OSHA

OSHA PEL (TWA) (mg/m³)

1 mg/m³

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Dust formation: dust mask. Safety glasses. Corrosionproof clothing. Face shield.



Materials for protective clothing : GIVE EXCELLENT RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. viton. PVC. GIVE GOOD RESISTANCE: leather. chlorinated polyethylene. polyethylene. neoprene/natural rubber. GIVE LESS RESISTANCE: styrene-butadiene rubber. nitrile rubber/PVC. PVA.

Hand protection : Gloves.

Eye protection : Face shield. In case of dust production: protective goggles.

Skin and body protection : Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.

Respiratory protection : Dust production: dust mask with filter type P2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Powder. Grains.
Molecular mass	: 126.07 g/mol
Colour	: Colourless or white.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 1.0 (13 %)
pH solution	: 13 %
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 101 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: 157 °C
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Vapour pressure at 50 °C	: 22 hPa
Relative vapour density at 20 °C	: 4.3
Relative density	: 1.6
Density	: 1653 kg/m ³
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in glycerol. Water: 14 g/100ml Ethanol: 40 g/100ml
Log Pow	: -1.74 (Estimated value)
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

Saturation concentration : 0.0015 g/m³

Other properties : Hygroscopic. May sublimate. Substance has acid reaction.

Oxalic Acid, Dihydrate

Safety Data Sheet

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

SECTION 10: Stability and reactivity

10.1. Reactivity

On heating: release of corrosive gases/vapours (formic acid). Upon combustion: CO and CO₂ are formed. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) bases: release of heat. Decomposes on exposure to UV light: release of corrosive gases/vapours (formic acid).

10.2. Chemical stability

Unstable on exposure to light. Hygroscopic.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Incompatible materials. High temperature. Moisture. Avoid dust formation.

10.5. Incompatible materials

Strong oxidizers. Strong bases. metals. Acid chlorides.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Oxalic Acid, Dihydrate (f)6153-56-6	
LD50 oral rat	7500 mg/kg
LD50 dermal rat	20000 mg/kg

Skin corrosion/irritation	: Causes severe skin burns and eye damage. pH: 1.0 (13 %)
Serious eye damage/irritation	: Causes serious eye damage. pH: 1.0 (13 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Vomiting.
Symptoms/injuries after skin contact	: Tingling/irritation of the skin. FOLLOWING SYMPTOMS MAY APPEAR LATER: May stain the skin. Discolouration of the (finger)nails.
Symptoms/injuries after eye contact	: Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue. Permanent eye damage.
Symptoms/injuries after ingestion	: AFTER ABSORPTION OF HIGH QUANTITIES: Burns to the gastric/intestinal mucosa. Nausea. Blood in vomit. Blood in stool. Shock. FOLLOWING SYMPTOMS MAY APPEAR LATER: Decreased renal function. Change in urine output. Change in urine composition.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Decreased renal function. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Coughing. Skin rash/inflammation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Classification concerning the environment: not applicable.
Ecology - water	: Mild water pollutant (surface water). Ground water pollutant. Harmful to fishes. Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). Slightly harmful to algae (EC50 (72h): 100 - 1000 mg/l). Slightly harmful to aquatic organisms (EC50 (48h): 100 - 1000 mg/l). pH shift.

Oxalic Acid, Dihydrate (6153-56-6)	
LC50 fishes 1	34.1 mg/l (96 h; Pimephales promelas; ANHYDROUS FORM)
LC50 other aquatic organisms 1	100 - 1000 mg/l (96 h; ANHYDROUS FORM)
EC50 Daphnia 1	137 mg/l (48 h; Daphnia magna; ANHYDROUS FORM)
LC50 fish 2	160 mg/l (48 h; Leuciscus idus; ANHYDROUS FORM)

Oxalic Acid, Dihydrate

Safety Data Sheet

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

Oxalic Acid, Dihydrate (6153-56-6)	
TLM fish 1	4000 mg/l (24 h; Lepomis macrochirus; ANHYDROUS FORM)
Threshold limit other aquatic organisms 1	100 - 1000,96 h; ANHYDROUS FORM
Threshold limit algae 1	790 mg/l (168 h; Scenedesmus quadricauda; ANHYDROUS FORM)
Threshold limit algae 2	80 mg/l (192 h; Microcystis aeruginosa; ANHYDROUS FORM)

12.2. Persistence and degradability

Oxalic Acid, Dihydrate (6153-56-6)	
Persistence and degradability	Readily biodegradable in water. Readily biodegradable in water in anaerobic conditions. Photolysis in water. Biodegradable in the soil. Photolysis in the air.

12.3. Bioaccumulative potential

Oxalic Acid, Dihydrate (6153-56-6)	
Log Pow	-1.74 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.
- Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

- UN-No.(DOT) : 3261
- DOT NA no. UN3261

14.2. UN proper shipping name

- DOT Proper Shipping Name : Corrosive solid, acidic, organic, n.o.s.
Oxalic acid
- Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136
- Hazard labels (DOT) : 8 - Corrosive substances



- DOT Symbols : G - Identifies PSN requiring a technical name
- Packing group (DOT) : II - Medium Danger

Oxalic Acid, Dihydrate

Safety Data Sheet

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

DOT Special Provisions (49 CFR 172.102)	: IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle. IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner. T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 212
DOT Packaging Bulk (49 CFR 173.xxx)	: 240

14.3. Additional information

Other information	: No supplementary information available.
State during transport (ADR-RID)	: Rail and road transport: not subject to ADR-RID.

Overland transport

No additional information available

Transport by sea

DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
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Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 15 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 50 kg

SECTION 15: Regulatory information

15.1. US Federal regulations

Oxalic Acid, Dihydrate (6153-56-6)

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

15.2. International regulations

CANADA

Oxalic Acid, Dihydrate (6153-56-6)

Not listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification	Class E - Corrosive Material
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EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Dermal) H312

Acute Tox. 4 (Oral) H302

Full text of H-phrases: see section 16

Oxalic Acid, Dihydrate

Safety Data Sheet

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

Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R21/22

Full text of R-phrases: see section 16

15.2.2. National regulations

Oxalic Acid, Dihydrate (6153-56-6)

Not listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

Oxalic Acid, Dihydrate (6153-56-6)

State or local regulations

U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases: see section 16:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

NFPA health hazard

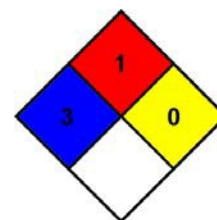
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

Personal Protection : F

SDS US (GHS HazCom 2012)

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