

Safety Data Sheet

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

Date of issue: 02/04/2014 Version: 1.0

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

1.1. Product identifier

Product form Substance

Substance name Potassium Permanganate

 CAS No
 7722-64-7

 Product code
 LC19850

 Formula
 KMnO4

Synonyms permanganate of potash / potassium salt permanganic acid

BIG no 10297

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

Use of the substance/mixture : Oxidant

Bleaching agent Reagent Disinfectant Deodorizer Algicide

Dyestuff/pigment: component

Medicine

Laboratory chemical Food industry: additive

Insecticide Germicide

1.3 Letails of the supplier of the safety data sheet

LabChem Inc

Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court

Zelienople, PA 16063 - USA T 412-826-5230 - F 724-473-0647 info@labchem.com - www.labchem.com

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

Ox. Sol. 2 H272 Acute Tox. 4 (Oral) H302 Aquatic Acute 1 H400 Aquatic Chronic 1 H410

2.2 Label elements

GHS-US labelling

Hazard pictograms (GHS-US)







GHS03

Signal word (GHS-US) : Dang

Hazard statements (GHS-US) : H272 - May intensify fire; oxidiser H302 - Harmful if swallowed

H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) : P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking

P220 - Keep/Store away from clothing, combustible materials P221 - Take any precaution to avoid mixing with combustibles P264 - Wash exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product

P273 - Avoid release to the environment

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

P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell

P330 - If swallowed, rinse mouth

P391 - Collect spillage

P501 - Dispose of contents/container to comply with local, state and federal regulations

23. Other hazards

Other hazards not contributing to the classification

: None under normal conditions.

24. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1 Substance Application of February Property Commences

Substance type

: Mono-constituent

Name	Product identifier	%	GHS-US classification
Potassium Permanganate (Main constituent)	(CAS No) 7722-64-7	100	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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

First-aid measures after skin contact

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact

Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

First-aid measures after ingestion

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital.

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. EXPOSURE TO HIGH CONCENTRATIONS: Respiratory difficulties. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedeina.

Symptoms/injuries after skin contact

: Tingling/irritation of the skin. May stain the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact

Corrosion of the eye tissue. Inflammation/damage of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Permanent eye damage.

Symptoms/injuries after ingestion

Nausea. Vomiting. Diarrhoea. Irritation of the gastric/intestinal mucosa. AFTER ABSORPTION OF HIGH QUANTITIES: Possible esophageal perforation. Shock. Slowing heart action. Low arterial pressure. Possible laryngeal spasm/oedema. Respiratory difficulties.

Chronic symptoms

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Respiratory difficulties. Impairment of the nervous system. Movement disturbances. Coordination disorders. Myasthenia. Tremor. Paralysis. Cramps/uncontrolled muscular contractions. Impaired memory. Emotional instability.

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

No additional information available

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: EXTINGUISHING MEDIA FOR SURROUNDING FIRES: All extinguishing media allowed.

Preferably: quantities of water.

Unsuitable extinguishing media

: No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Fire hazard

DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Promotes combustion.

Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard

INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity

Decomposes on exposure to temperature rise: oxidation which increases fire hazard. Reacts with combustible materials: risk of spontaneous ignition. Violent to explosive reaction with (some) acids: release of toxic and corrosive gases/vapours. Reacts violently with many compounds e.g.: with organic material and with (strong) reducers. With (some) metals. With (increased) risk of

fire/explosion.

5.3 Advice for firefighters

Precautionary measures fire

: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation.

Firefighting instructions

: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Take account of environmentally hazardous firefighting water. Use water moderately and if

possible collect or contain it.

Protection during firefighting

: Heat/fire exposure: compressed air/oxygen apparatus.

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. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.

Emergency procedures

Mark the danger area. Prevent dust cloud formation. No naked flames. Keep containers closed. 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.

6.1.2. For emergency responders

Protective equipment

: Equip cleanup crew with proper protection. Do not breathe dust.

Emergency procedures

: If a major spill occurs, all personnel should be immediately evacuated and the area ventilated. Stop release. Ventilate area.

62. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers,

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. Dam up the solid spill. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.

Methods for cleaning up

Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Spill must not return in its original container. See "Material-handling" for suitable container materials. 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. Keep the substance free from contamination. Use corrosionproof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

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7.2 Conditions for safe storage, including any incompatibilities

Heat and ignition sources

KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage

KEEP SUBSTANCE AWAY FROM: combustible materials. reducing agents. (strong) acids.

metal powders, cellulosic materials, organic materials, alcohols, peroxides,

Storage area

Store at ambient temperature. Keep out of direct sunlight. Store in a dry area. Fireproof storeroom. Unauthorized persons are not admitted. Keep only in the original container. Store

only in a limited quantity. Meet the legal requirements.

Special rules on packaging

SPECIAL REQUIREMENTS: closing, clean, correctly labelled, meet the legal requirements.

Secure fragile packagings in solid containers.

Packaging materials

SUITABLE MATERIAL: steel. aluminium. glass. stoneware/porcelain. MATERIAL TO AVOID:

wood, cellusosic material.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters and the state of the

Potassium Permang	anate (7722-64-7)	
USA ACGIH	ACGIH TWA (mg/m³)	0.1 mg/m³
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	5 mg/m³ as Mn

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. Ensure adequate ventilation.

Materials for protective clothing

GIVE EXCELLENT RESISTANCE: polyethylene. GIVE GOOD RESISTANCE: butyl rubber.

PVC. polyethylene/ethylenevinylalcohol.

Hand protection

Eye protection

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

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

Respiratory protection

Skin and body protection

Dust production: dust mask with filter type P3. High dust production: self-contained breathing

apparatus.

SECTION 9: Physical and chemical properties

9.1 (** Information on basic physical and chemical properties

Physical state

Appearance

: Crystalline solid. Crystalline powder.

Molecular mass

: 158.03 g/mol

Colour

: Dark violet-brown.

Odour

: Odourless.

Odour threshold

: No data available

pН

: 7.0 - 8.5 (1.6 %)

pH solution

1.6 %

Relative evaporation rate (butylacetate=1)

: No data available

Melting point

= > 240 °C

Freezing point

No data available

Boiling point

Not applicable

Not applicable

Flash point

Not applicable

Self ignition temperature Decomposition temperature

= > 240 °C

Flammability (solid, gas)

: No data available

Vapour pressure

: < 0.10 hPa

Relative vapour density at 20 °C

: No data available

Relative density

Density

: 2700 kg/m3

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Moderately soluble in water. Substance sinks in water. Soluble in ethanol. Soluble in methanol. Soluble in acetone. Soluble in acetic acid. Soluble in sulfuric acid. Soluble in pyridine. Water: 6.4 g/100ml Log Pow : -1.73 (Estimated value) Log Kow No data available Viscosity, kinematic No data available Viscosity, dynamic No data available **Explosive properties** No data available Oxidising properties May intensify fire; oxidiser. **Explosive limits** No data available 9.2 Other information Minimum ignition energy Not applicable

SADT : Not applicable VOC content : Not applicable

Other properties : Opaque. Substance has basic reaction.

SECTION 10: Stability and reactivity

Decomposes on exposure to temperature rise: oxidation which increases fire hazard. Reacts with combustible materials: risk of spontaneous ignition. Violent to explosive reaction with (some) acids: release of toxic and corrosive gases/vapours. Reacts violently with many compounds e.g.; with organic material and with (strong) reducers. With (some) metals. With (increased) risk of fire/explosion.

10.2 Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts exothermically with combustible materials: (increased) risk of fire.

10.4 Conditions to avoid 2007 in

incompatible materials.

10.5 Incompatible materials

Strong reducing agents. Organic compounds. combustible materials, metals.

10.6 Hazardous decomposition products

manganese.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Potassium Permanganate (\f)7722-64-7	
LD50 oral rat	1090 mg/kg (Rat)
Skin corrosion/irritation	Not classified
	pH: 7.0 - 8.5 (1.6 %)
Serious eye damage/irritation	Not classified
	pH: 7.0 - 8.5 (1.6 %)
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

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Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract.

Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS:

Respiratory difficulties. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema.

Symptoms/injuries after skin contact : Tingling/irritation of the skin. May stain the skin. ON CONTINUOUS EXPOSURE/CONTACT:

Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Corrosion of the eye tissue. Inflammation/damage of the eye tissue. ON CONTINUOUS

EXPOSURE/CONTACT: Permanent eye damage.

Symptoms/injuries after ingestion : Nausea. Vomiting. Diarrhoea. Irritation of the gastric/intestinal mucosa. AFTER ABSORPTION

OF HIGH QUANTITIES: Possible esophageal perforation. Shock. Slowing heart action. Low

arterial pressure. Possible laryngeal spasm/oedema. Respiratory difficulties.

Chronic symptoms ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Respiratory difficulties. Impairment of

the nervous system. Movement disturbances. Coordination disorders. Myasthenia. Tremor. Paralysis. Cramps/uncontrolled muscular contractions. Impaired memory. Emotional instability.

Likely routes of exposure Skin and eye contact;Inhalation

SECTION 12: Ecological information

12.1 Toxicity

Ecology - general Dangerous for the environment.

Ecology - air TA-Luft Klasse 5.2.2/III.

Ecology - water Severe water pollutant (surface water). Ground water pollutant. Toxic to fishes. Very toxic to

invertebrates (Daphnia).

Potassium Permanganate (7722-64-7)		
LC50 fishes 1	0.261 mg/l (96 h; Ictalurus punctatus)	
EC50 Daphnia 1	0.235 mg/l (24 h; Daphnia magna)	
LC50 fish 2	1.22 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)	
EC50 Daphnia 2	0.5 mg/l (96 h; Crustacea)	
TLM fish 1	5.4 ppm (48 h; Lepomis macrochirus)	
Threshold limit other aquatic organisms 1	> 0.64 mg/l (Plankton)	
Threshold limit algae 1	10 mg/l (4 h; Chlorella sp.)	

12.2 Persistence and degradability

Potassium Permanganate (7722-64-7)		
Persistence and degradability	Biodegradability: not applicable.	
Biochemical oxygen demand (BOD)	Not applicable	
Chemical oxygen demand (COD)	Not applicable	
ThOD	Not applicable	
BOD (% of ThOD)	Not applicable	

12.3 Bioaccumulative potential

Potassium Permanganate (7722-64-7)		
Log Pow	-1.73 (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. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Immobilize the toxic or harmful components. Remove to an authorized dump (Class I).

Additional information : LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive

2008/98/EC.

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SECTION 14: Transport information

In accordance with DOT

Transport document description UN1490 Potassium permanganate, 5.1, II

UN-No.(DOT) 1490 DOT NA no. UN1490

DOT Proper Shipping Name Potassium permanganate

Department of Transportation (DOT) Hazard

Classes

: 5.1 - Class 5.1 - Oxidizer 49 CFR 173.128

Hazard labels (DOT) : 5.1 - Oxidiser



Packing group (DOT)

DOT Special Provisions (49 CFR 172.102)

: II - Medium Danger

: 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) : 152 DOT Packaging Non Bulk (49 CFR 173.xxx) : 212 DOT Packaging Bulk (49 CFR 173.xxx) : 240 DOT Quantity Limitations Passenger aircraft/rail : 5 kg

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 25 kg

CFR 175.75)

DOT Vessel Stowage Location

D - The material must be stowed "on deck only" 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, but the material is prohibited on passenger

vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other

56 - Stow "separated from" ammonium compounds,58 - Stow "separated from" cyanides

Marine poliutant

Р 6



Additional information

Other information : No supplementary information available.

State during transport (ADR-RID) : as solid.

Transport document description : UN 1490 Potassium permanganate, 5.1, II, (E)

Packing group (ADR) : 11

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Class (ADR) 5.1 - Oxidizing substances

Hazard identification number (Kemler No.) : 50
Classification code (ADR) : O2

Danger labels (ADR) : 5.1 - Oxidizing substances



Orange plates

50 1490

Tunnel restriction code : E

Transport by sea

UN-No. (IMDG)

1490

Class (IMDG) 5.1 - Oxidizing substances

EmS-No. (1) F-H EmS-No. (2) S-Q

Air transport

UN-No.(IATA) 1490

Class (IATA) 5 - Oxidizing substances
Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1 US Federal regulations

Potassium Permanganate (7722-64-7)	
Listed on the United States TSCA (Toxic Substar Listed on SARA Section 313 (Specific toxic chem	
RQ (Reportable quantity, section 304 of EPA's List of Lists):	100 lb
SARA Section 311/312 Hazard Classes	Reactive hazard

<u>्रिक्त प्रकृति प्रित्य के प्रित्र के प्रित्र का किया के प्रक्ति के प्रकृत के अपने के प्रकृत के प्रकृति के प्र</u>

15 2 International regulations

CANADA

Potassium Permanganate (7722-64-7)		
Listed on the Canadian DSL (Domestic S	ustances List) inventory.	
WHMIS Classification	Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects	

EU-Regulations

No additional information available

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

Ox. Sol. 2 H272 Acute Tox. 4 (Oral) H302 Aquatic Acute 1 H400 Aquatic Chronic 1 H410

Full text of H-phrases: see section 16

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

O; R8 Xn; R22 N; R50/53

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Full text of R-phrases: see section 16

15.2.2. National regulations

Potassium	Permangar	nate (7722	-64-7)	_ ` `
Listed on the	e Canadian	Ingredient	Disclos	ure Li

15 3 US State regulations

No additional information available

SECTION 16: Other information

Full text of H-phrases: see section 16:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4		
Aquatic Acute 1	Hazardous to the aquatic environment — AcuteHazard, Category 1		
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1		
Ox. Sol. 2	Oxidising Solids, Category 2		
H272	May intensify fire; oxidiser		
H302	Harmful if swallowed		
H400	Very toxic to aquatic life		
H410	Very toxic to aquatic life with long lasting effects		

NFPA health hazard

1 - Exposure could cause irritation but only minor residual

injury even if no treatment is given.

NFPA fire hazard

0 - Materials that will not burn.

NFPA reactivity

0 - Normally stable, even under fire exposure conditions,

and are not reactive with water.

NFPA specific hazard

: OX - This denotes an oxidizer, a chemical which can

greatly increase the rate of combustion/fire.



HMIS III Rating

Health

1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

0 Minimal Hazard

Physical

0 Minimal Hazard

Personal Protection

SE

SDS US (GHS HazCom 2012)

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