

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/25/2009

Reviewed on 06/24/2009

1 Identification of substance:**Product details:****Product name:** Potassium permanganate**Stock number:** 14307**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Potassium permanganate (CAS# 7722-64-7): 100%

Identification number(s):**EINECS Number:** 231-760-3**Index number:** 025-002-00-9**3 Hazards identification****Hazard description:**

Xn Harmful
 O Oxidizing
 N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 8 Contact with combustible material may cause fire.

R 22 Harmful if swallowed.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	0
REACTIVITY	2

Health (acute effects) = 2

Flammability = 0

Reactivity = 2

GHS label elements**Danger**

2.14/2 - May intensify fire; oxidizer.

**Danger**

3.1/3 - Toxic if swallowed.

**Warning**

4.1/1 - Very toxic to aquatic life with long lasting effects.

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

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Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Specific treatment (see label).

Rinse mouth.

In case of fire: Use for extinction: CO2, powder or water spray.

Collect spillage.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Metal oxide fume

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Storage**Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Store away from flammable substances.

Store away from reducing agents.

Further information about storage conditions:

Keep container tightly sealed.

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Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Manganese, elemental & inorganic compounds (as Mn)

	mg/m ³
ACGIH TLV	0.2
Austria MAK	5
Belgium TWA	5
Denmark TWA	2.5
Finland TWA	0.5
Hungary TWA	0.3; 0.6-STEEL
Germany MAK	0.55
Japan OEL	0.3 (respirable dust)
Korea TLV	0.2
Netherlands MAC-TGG	1; 3-MAC-K
Norway TWA	2.5
Poland TWA	0.3; 5-MAC
Russia	0.2-STEEL (fume)
Sweden NGV	1; 2.5-TGV (respirable dust) 2.5; 5-TGV (total dust)
United Kingdom TWA	5
USA PEL	5-Ceiling

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline
Color:	Violet
Odor:	Odorless

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: Not applicable

Flammability (solid, gaseous) Contact with combustible material may cause fire.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Not determined

Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure: Not determined

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Density at 20°C (68°F): 2.703 g/cm³**Solubility in / Miscibility with Water:** Soluble**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Reducing agents**Dangerous reactions**

Reacts with reducing agents

Reacts with flammable substances

Dangerous products of decomposition: Metal oxide fume**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	1151 mg/kg (guinea pig)
		2157 mg/kg (mouse)
		750 mg/kg (rat)
LDLo	LDLo	400 mg/kg (dog)
		143 mg/kg (human)
		600 gm/kg (rabbit)
		100 mg/kg (wmm)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Other information (about experimental toxicology):**

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Chronic exposure to manganese may cause impairment to the central nervous system. Symptoms include sluggishness, sleepiness, muscle weakness, loss of facial muscle control, edema, emotional disturbances, spastic gait and falling.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Gastrointestinal - nausea or vomiting.

Gastrointestinal - other changes.

Behavioral - somnolence (general depressed activity).

Behavioral - alteration of classical conditioning.

Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - true cholinesterase.

Vascular - BP lowering not characterized in autonomic section.

Liver - hepatitis (hepatocellular necrosis), diffuse

Kidney, Ureter, Bladder - changes in tubules (including acute renal failure, acute tubular necrosis).

Lungs, Thorax, or Respiration - dyspnea.

Reproductive - Fertility - male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females)

Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

12 Ecological information:**Ecotoxicological effects:****Remark:** Very toxic for fish

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General notes:

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Very toxic for aquatic organisms

13 Disposal considerations**Product:**

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information**DOT regulations:**

Hazard class: 5.1
Identification number: UN1490
Packing group: II
Hazardous substance: 100 lbs, 45.4 kg
Proper shipping name (technical name): POTASSIUM PERMANGANATE
Label: 5.1

Land transport ADR/RID (cross-border)

ADR/RID class: 5.1 (02) Oxidizing substances
Danger code (Kemler): 50
UN-Number: 1490
Packaging group: II
Description of goods: 1490 POTASSIUM PERMANGANATE

Maritime transport IMDG:

IMDG Class: 5.1
UN Number: 1490
Label: 5.1
Packaging group: II
Proper shipping name: POTASSIUM PERMANGANATE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 5.1
UN/ID Number: 1490
Label: 5.1
Packaging group: II
Proper shipping name: POTASSIUM PERMANGANATE

UN "Model Regulation": UN1490, POTASSIUM PERMANGANATE, 5.1, II

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Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID**15 Regulations****Product related hazard informations:****Hazard symbols:**

Xn Harmful
 O Oxidizing
 N Dangerous for the environment

Risk phrases:

8 Contact with combustibile material may cause fire.
 22 Harmful if swallowed.
 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

60 This material and its container must be disposed of as hazardous waste.
 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
 All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.
 This product contains manganese and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

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