

SAFETY DATA SHEET

Date Accessed: 25/08/2023

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SECTION 1. IDENTIFICATION

Product Name: Sodium Permanganate Solution

CAS #: 10101-50-5

Relevant identified uses of the substance: Scientific research and development

Supplier details:

Stanford Advanced Materials

E-mail: sales@samaterials.com

Tel: (949) 407-8904

Address: 23661 Birtcher Dr., Lake Forest, CA 92630 U.S.A.

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Oxidizing liquids (Category 2), H272

Acute toxicity, Oral (Category 4), H302

Skin corrosion (Category 1B), H314

Serious eye damage (Category 1), H318

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.,

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

,Mixtures

Formula: $MnNaO_4$

Molecular weight: 141.93 g/mol

Hazardous components

Sodium permanganate

CAS No. 10101-50-5 EC No. 233-251-1

Ox. Sol. 2; Acute Tox.4; Skin Corr. 1B; Eye Dam.1; Aquatic Acute1; Aquatic Chronic 1; H272, H302, H314, H410

Concentration: <100%,

SECTION 4. FIRST AID MEASURES

,Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.

Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or

in section 11

Indication of any immediate medical attention and special treatment needed

No data available,

SECTION 5. FIREFIGHTING MEASURES

,Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

Sodium oxides, Manganese/manganese oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Use water spray to cool unopened containers.,

SECTION 6. ACCIDENTAL RELEASE MEASURES

,Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the

environment must be avoided. Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing

and

place in container for disposal according to local regulations (see section 13).

Reference to other sections

For disposal see section 13,

SECTION 7. HANDLING AND STORAGE

,Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated,

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

,Components with workplace control parameters

Sodium permanganate

CAS-No. 10101-50-5

Value: C

Control Parameters: 5.000000 mg/m³

Basis: USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants

Remarks: Ceiling limit is to be determined from breathing-zone air samples.

Value: TWA

Control Parameters: 0.200000 mg/m³

Basis: USA. ACGIH Threshold Limit Values (TLV)

Remarks: Central

Nervous System impairment

Adopted values or notations enclosed are those for which changes are proposed in the NIC See

Notice of Intended Changes (NIC) varies

Value: TWA

Control Parameters: 1.000000 mg/m³

Basis: USA. NIOSH Recommended Exposure Limits

Value: ST

Control Parameters: 3.000000 mg/m³

Basis: USA. NIOSH Recommended Exposure Limits

Value: TWA

Control Parameters: 0.100000 mg/m³

Basis: USA. ACGIH Threshold Limit Values (TLV)

Remarks: Central Nervous System impairment 2015 Adoption varies

Value: C

Control Parameters: 5 mg/m³

Basis: USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants

Remarks: Ceiling limit is to be determined from breathing-zone air samples.

Value: TWA

Control Parameters: 0.1 mg/m³

Basis: USA. ACGIH Threshold Limit Values (TLV)Remarks: Central Nervous System impairment Not classifiable as a human carcinogen varies

Value: TWA

Control Parameters: 0.02 mg/m³

Basis: USA. ACGIH Threshold Limit Values (TLV)

Remarks: Central Nervous System impairment Not classifiable as a human carcinogen varies

Value: TWA

Control Parameters: 1 mg/m³

Basis: USA. NIOSH Recommended Exposure Limits

Value: ST

Control Parameters: 3 mg/m³

Basis: USA. NIOSH Recommended Exposure Limits

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated

use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.

If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure - Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.,

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

,Information on basic physical and chemical properties

a)Appearance

Form: liquid

b)Odor

No data available

c)Odor Threshold

No data available

d)pH

No data available

e)Melting point/freezing point

No data available

f)Initial boiling point and boiling range

100 °C (212 °F)

g)Flash point

No data available

h)Evaporation rate

No data available

i)Flammability (solid, gas)

No data available

j)Upper/lower flammability or explosive limits

No data available

k)Vapor pressure

No data available

l)Vapor density

No data available

m) Relative density - 1.391 g/cm³

n)Water solubility

No data available

o)Partition coefficient: n-octanol/water

No data available

p)Auto-ignition temperature

No data available

q)Decomposition

temperature

No data available

r)Viscosity

No data available

s)Explosive properties

No data available

t)Oxidizing properties

No data available

Other safety information

No data available,

SECTION 10. STABILITY AND REACTIVITY

,Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions No data available

Conditions to avoid

No data available

Incompatible materials

Powdered metals, Strong oxidizing agents, Strong acids, Organic materials, Strong reducing agents

Hazardous decomposition products

Other decomposition products-No data available

In the event of fire: see section 5,

SECTION 11. TOXICOLOGICAL INFORMATION

,Information on toxicological effects

Acute toxicity

No data available

Inhalation:

No data available

Dermal:

No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity -single exposure

No data available

Specific target organ toxicity-repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more

advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds., Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache

Stomach-Irregularities-Based on Human Evidence

Stomach-Irregularities-Based on Human Evidence (Sodium permanganate),

SECTION 12. ECOLOGICAL INFORMATION

,Toxicity

No data available

Persistence and degradability:

No data available

Bioaccumulative potential:

No data available

Mobility in soil:

No data available

Results of PBT and vPvB assessment:

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.,

SECTION 13. DISPOSAL CONSIDERATIONS

,Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this

material is highly flammable.

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contact a licensed professional waste disposal service to dispose of this material.

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.,

SECTION 14. TRANSPORT INFORMATION

,DOT (US)

UN number: 3214 Class: 5.1 Packing group: II

Proper shipping name: Permanganates, inorganic, aqueous solution, n.o.s.(Sodium permanganate)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 3214 Class: 5.1 Packing group: II

EMS-No: F-H, S-Q

Proper shipping name: PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (Sodium permanganate)

Marine pollutant: yes|ATA

UN number: 3214

Class: 5.1 Packing group: II

Proper shipping name: Permanganates, inorganic, aqueous solution, n.o.s. (Sodium permanganate)

SECTION 15. REGULATORY INFORMATION

,SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Sodium permanganate

CAS-No. 10101-50-5

Revision Date

2007-07-01

SARA 311/312

Hazards

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Components

Water

CAS-No.7732-18-5

Revision Date 2007-07-01

Sodium permanganate

CAS-No. 10101-50-5

New Jersey Right To Know Components

Water

CAS-No. 7732-18-5

Revision Date 2007-07-01

Sodium permanganate

CAS-No. 10101-50-5

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.