

SAFETY DATA SHEET
40% SODIUM PERMANGANATE

Revision date 4/6/2017

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Sodium permanganate
Description: 40% minimum as NaMnO₄

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

Identified uses: Chemical oxidation of organic compounds for remediation

1.3 Details of the supplier of the safety data sheet

Company: Compass Remediation Chemicals
2028 East Ben White Blvd
#240-1974
Austin, TX 78741
Telephone: (866) 221-9167

1.4 Emergency telephone number

Emergency Phone #: CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

2.1 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
Specific target organ toxicity, single exposure (Category 3, Respiratory Tract irritation)
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.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.

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H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210 Keep away from heat.
P220 Keep/store away from clothing/combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
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.
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 victim to fresh air and keep at rest in a position 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 or doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS – none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical name	CAS number	%
Sodium Permanganate	10101-50-5	36 - 40

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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4. FIRST AID MEASURES

4.1 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

Remove victim to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Get medical attention immediately

In case of skin contact

Take off immediately all contaminated clothing. (Caution: Solution may ignite certain textiles.) Immediately flush skin with plenty of water. Get medical attention immediately. Wash contaminated clothing before reuse.

Contact with skin may leave a brown stain of insoluble manganese dioxide. This can be easily removed by washing with a mixture of equal volume of household vinegar and 3% hydrogen peroxide, followed by washing with soap and water

In case of eye contact

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Get medical attention immediately

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Contact with this material will cause burns to the skin, eyes and mucous membranes. Permanent eye damage including blindness could result.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Decomposition products are alkaline. Brown stain is insoluble manganese dioxide.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Use large amounts of water. Dike to contain.
DO NOT USE dry chemicals, foams

5.2 Special hazards arising from the substance or mixture

Sodium oxides, Manganese/manganese oxides
May intensify fire; oxidizer. May ignite combustibles (wood, paper, oil, clothing, etc.). Contact with incompatible materials or heat (135 °C / 275 °F) could result in violent exothermic chemical reaction. Oxidizing agent, may cause spontaneous ignition of combustible materials. By heating and fire, corrosive vapors/gases may be formed.

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5.3 Special protective equipment and precautions for firefighters

Wear self-contained breathing apparatus for firefighting.

5.4 Further information

Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Dike fire control water for later disposal. Water runoff can cause environmental damage.

The product is not flammable. May intensify fire; oxidizer. May ignite combustibles (wood, paper, oil, clothing, etc.). Contact with incompatible materials or heat (135 °C / 275 °F) could result in violent exothermic chemical reaction.

6. ACCIDENTAL RELEASE MEASURES

6.1 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.

6.2 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.

6.3 Methods and materials for containment and cleaning up

Keep combustibles (wood, paper, oil, etc.) away from spilled material. Should not be released into the environment. This product is miscible in water. Stop leak if possible without any risk. Dike the spilled material, where this is possible. Clean up spills immediately by sweeping or shoveling up the material. Do not return spilled material to the original container; transfer to a clean metal or plastic drum. To clean up potassium permanganate solutions, follow either of the following two options:

Option # 1: Dilute to approximately 6% with water, and then reduce with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water.

Option # 2: Absorb with inert media like diatomaceous earth or inert floor dry, collect into a drum and dispose of properly. Do not use saw dust or other incompatible media. Disposal of all materials shall be in full and strict compliance with all federal, state, and local regulations pertaining to permanganates. To clean contaminated floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations. If not, collect water and treat as described above.

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Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Take any precaution to avoid mixing with combustibles. Do not get this material in your eyes, on your skin, or on your clothing. Do not breathe dust or mist or vapor of the solution. Use personal protective equipment as recommended in Section 8 of the SDS. If clothing becomes contaminated, remove and wash off immediately. Spontaneous ignition may occur in contact with cloth or paper. When using, do not eat, drink or smoke. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Avoid release to the environment.

7.2 Conditions for safe storage, including any incompatibilities

Store locked up. 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. Segregate from acids, peroxides, formaldehyde, and all combustible, organic, or easily oxidized materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium Permanganate (CAS 10101-50-5)	Ceiling	5 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sodium Permanganate (CAS 10101-50-5)	TWA	0.1 mg/m ³	Inhalable fraction.
		0.02 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Sodium Permanganate (CAS 10101-50-5)	STEL	3 mg/m ³	Fume.
	TWA	1 mg/m ³	Fume.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Follow standard monitoring procedures.

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8.2 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. Provide adequate general and local exhaust ventilation. An eye wash and safety shower must be available in the immediate work area.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

Skin protection

Hand protection Wear chemical-resistant, impervious gloves. Use protective gloves made of: Rubber or plastic. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing. Rubber or plastic apron.

Respiratory protection In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene Considerations

When using, do not eat, drink or smoke. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form:	Purple liquid
b) Odor	Odorless
c) Odor Threshold	No data available
d) pH	5-8
e) Melting point/freezing point	< 24.8 °F (< -4 °C)
f) Initial boiling point and boiling range	>213.8 °F (> 101 °C)
g) Flash point	Does not flash.
h) Evaporation rate	As water.

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i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability or explosive limits	Not applicable
k) Vapor pressure	760 mm @ 105 degrees C
l) Vapor density	Not applicable
m) Relative density	1.391 g/cm ³
n) Water solubility	Miscible with water.
o) Partition coefficient: noctanol/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	Not explosive. Can explode in contact with sulfuric acid, peroxides, and metal powders.
t) Oxidizing properties	Strong oxidizing agent.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Contact with combustible material may cause fire. Can explode in contact with sulfuric acid, peroxides and metal powders.

10.4 Conditions to avoid

Contact with incompatible materials or heat (135 °C / 275 °F) could result in violent exothermic chemical reaction.

10.5 Incompatible materials

Acids, peroxides, and all combustible organic or readily oxidizable materials including inorganic oxidizable materials and metal powders. With hydrochloric acid, chlorine gas is liberated.

10.6 Hazardous decomposition products

By heating and fire, corrosive vapors/gases may be formed. Contact with hydrochloric acid liberates chlorine gas.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.

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Symptoms related to the physical, chemical and toxicological characteristics

Contact with this material will cause burns to the skin, eyes and mucous membranes.
Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Skin corrosion/irritation

Causes severe skin burns.

Serious eye damage/eye irritation

Respiratory or skin sensitization

Respiratory sensitization

Not classified.

Skin sensitization

Not classified.

Germ cell mutagenicity

Not classified.

Carcinogenicity

Not classified.

Reproductive toxicity

Not classified.

Specific target organ toxicity - single exposure

May cause irritation of respiratory tract.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not classified.

Chronic effects

May cause damage to respiratory system. Prolonged exposure, usually over many years, to manganese oxide fume/dust can lead to chronic manganese poisoning, chiefly affecting the central nervous system. Chronic effects Chronic effects are not expected when this product is used as intended.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Expected to be readily converted by oxidizable materials to insoluble manganese oxide.

12.3 Bioaccumulative potential

Potential to bioaccumulate is low.

12.4 Mobility in soil

The product is miscible with water. May spread in water systems

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

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

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13. DISPOSAL CONSIDERATIONS

Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	D001: Ignitable waste The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues/ Unused products	Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Rinse container at least three times to an absence of pink color before disposing. Empty containers should be taken to an approved waste handling site for recycling or disposal.

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
DOT Hazard Class: 49 CFR172.101 5.1
Hazard Class: 49 CFR172.101 Oxidizer

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

IATA

UN number: 3214 Class: 5.1 Packing group: II
Proper shipping name: Permanganates, inorganic, aqueous solution, n.o.s. (Sodium permanganate)

15. REGULATORY INFORMATION

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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CERCLA/SARA Hazardous Substances – Not applicable.

Drug Enforcement Administration (DEA) (21 CFR 1310.02
(b) 8: List II chemical.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Reportable Quantity - * pounds (RCRA hazardous waste)

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No
	Delayed Hazard - No
	Fire Hazard – No
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Sodium Permanganate	10101-50-5	36 – 40

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Sodium Permanganate (CAS 10101-50-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Sodium Permanganate (CAS 10101-50-5)	6588
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Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Sodium Permanganate (CAS 10101-50-5)	15 % wt
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DEA Exempt Chemical Mixtures Code Number

Sodium Permanganate (CAS 10101-50-5)	6588
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US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

California OSH Hazardous Substance List: Listed.

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US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Sodium Permanganate (CAS 10101-50-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Sodium Permanganate (CAS 10101-50-5)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Ox. Sol.	Oxidizing solids
Skin Corr.	Skin corrosion

HMIS Rating

Health:	1
Flammability:	0
Physical Hazard:	0
Protective Equipment:	D

NFPA Rating



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List of abbreviations

TWA: Time weighted average. LD50: Lethal Dose, 50%.

LC50: Lethal Concentration, 50%.

IMDG: International Maritime Dangerous Goods.

IATA: International Air Transport Association.

MARPOL: International Convention for the Prevention of Pollution from Ships.

Disclaimer

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