

Potassium Permanganate

Version number: 2.0

SECTION 1: Identification

1.1 Product identifier

Identification of the substance	potassium permanganate
Trade name	<u>Potassium Permanganate</u>
CAS number	7722-64-7

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

Relevant identified uses	Oxidizing agent Laboratory chemical Bleaching agent Water treatment chemical Chemicals for synthesis
Uses advised against	Do not use for products which come into direct contact with the skin

1.3 Details of the supplier of the safety data sheet

Valudor Products, LLC 179 Calle Magdalena Suite 100 Encinitas, California CA 92024 United States	Telephone: +1 (760) 635 8500 e-mail: info@valudor.com Website: www.valudor.com
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1.4 Emergency telephone number

Emergency information	800-535-5053 (Infotrac)
As above or nearest toxicological information center.	

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.10	acute toxicity (oral)	4	Acute Tox. 4	H302
A.2	skin corrosion/irritation	1C	Skin Corr. 1C	H314
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
A.7	reproductive toxicity	2	Repr. 2	H361d

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Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.9	specific target organ toxicity - repeated exposure	2	STOT RE 2	H373
B.14	oxidizing solid	2	Ox. Sol. 2	H272

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

Delayed or immediate effects can be expected after short or long-term exposure.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Signal word danger

Pictograms

GHS03, GHS05, GHS07,
GHS08



Hazard statements

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs (brain) through prolonged or repeated exposure (if inhaled).

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep/store away from clothing/combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P260	Do not breathe dust.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331+P310	If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center/doctor.
P303+P361+P353+P310	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin

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Precautionary statements

	with water or shower. Immediately call a poison center/doctor.
P304+P340+P310	If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor.
P305+P351+P338+P310	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
P314	Get medical advice/attention if you feel unwell.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use water to extinguish.
P405	Store locked up.
P501	Dispose of contents/container to an authorized waste treatment facility.

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	potassium permanganate
Identifiers	
CAS No	7722-64-7
Molecular formula	KMnO ₄
Molar mass	158 g/mol

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Remove affected person from the danger area and lay down.
Do not leave affected person unattended.
Self-protection of the first aider.

Following inhalation

Provide fresh air.
Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.
Causes poorly healing wounds.

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Call a physician immediately.

Following eye contact

Rinse immediately carefully and thoroughly with eye shower or water.

Remove contact lenses, if present and easy to do. Continue rinsing.

Get immediate medical advice/attention.

Following ingestion

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting.

Call a physician immediately.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Cough, pain, choking, and breathing difficulties.

Causes poorly healing wounds.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Non-combustible.

Oxidizing.

Coordinate firefighting measures to the fire surroundings.

Suitable extinguishing media

water

Unsuitable extinguishing media

fire extinguishing powder, carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Danger of bursting container.

Oxidizing property.

Contact with combustible material may cause fire.

Hazardous combustion products

pyrolysis products, toxic, manganese compound, irritant vapors / gases

5.3 Advice for firefighters

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

chemical protection suit, self-contained breathing apparatus (SCBA)

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Do not get in eyes, on skin, or on clothing.

Control of dust.

Do not breathe dust.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

Keep away from sources of ignition - No smoking.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Knock down dust with water spray.

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Take up mechanically.

Advice on how to clean up a spill

Collect spillage.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

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Removal of dust deposits.

Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Handling of incompatible substances or mixtures

Keep away from

organic absorbing material, pulp/paper, acids, ammonia (NH₃), peroxides, sulfur, phosphorus, reducing agents

Measures to protect the environment

Avoid release to the environment.

Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Remove contaminated clothing and protective equipment before entering eating areas.

Do not breathe dust.

Do not get in eyes, on skin, or on clothing.

Avoid contact during pregnancy/while nursing.

Wash thoroughly after handling.

Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

Keep reduction valves/valves and fittings free from oil and grease.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Observe compatible storage of chemicals.

Keep/store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

Protect against external exposure, such as

heat, humidity, sunlight

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

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

Store in a dry place.

Storage temperature

recommended storage temperature: 5 - 35 °C

Packaging compatibilities

Only packagings which are approved (e.g. acc. to DOT) may be used.

7.3 Specific end use(s)

No information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The following constituents are the only constituents of the product which have a PEL, a TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Notation	Source
US	Particulates not otherwise regulated	-	PEL (CA)	-	10	-	-	dust	Cal/OSHA PEL
US	Particulates not otherwise regulated	-	PEL (CA)	-	5	-	-	r	Cal/OSHA PEL
US	particulates not otherwise classified (PNOC)	-	PEL	-	15	-	-	dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	1,765	-	-	-	partml, dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	529.5	-	-	-	partml, r, dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	-	5	-	-	r	29 CFR 1910.1000
US	particulate not otherwise regulated	-	REL	-	-	-	-	appx-D	NIOSH REL
US	manganese, inorganic compounds	7722-64-7	TLV®	-	0.1	-	-	i, Mn	ACGIH® 2024
US	manganese, inorganic compounds	7722-64-7	TLV®	-	0.02	-	-	r, Mn	ACGIH® 2024
US	manganese compounds	7722-64-7	PEL (CA)	-	0.2	-	-	Mn	Cal/OSHA PEL
US	manganese compounds	7722-64-7	REL	-	1 (10 h)	-	3	Mn	NIOSH REL
US	manganese compounds	7722-64-7	PEL	-	-	-	-	Mn	29 CFR 1910.1000

Notation

appx-D see Appendix D - Substances with No Established RELs

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Notation

dust	as dust
i	inhalable fraction
Mn	calculated as Mn (manganese)
partml	particles/ml
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Avoid contact during pregnancy/while nursing.

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
PVC: polyvinyl chloride	≥ 0,5 mm	>480 minutes (permeation: level 6)
NR: natural rubber, latex	≥ 0,5 mm	>480 minutes (permeation: level 6)
CR: chloroprene (chlorobutadiene) rubber	≥ 0,5 mm	>480 minutes (permeation: level 6)
NBR: acrylonitrile-butadiene rubber	≥ 0,35 mm	>480 minutes (permeation: level 6)
FKM: fluoro-elastomer	≥ 0,4 mm	>480 minutes (permeation: level 6)

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Body protection

Protective clothing for use against solid particulates.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Recommendations: P3 (filters at least 99,95 % of airborne particles, color code: White).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	solid (powder, crystalline)
Color	metallic lustre - dark violet - brown
Odor	odorless
Odor threshold	not determined
Other safety parameters	
pH (value)	7 – 8.5 (in aqueous solution: 1.6 wt%)
Melting point/freezing point	>240 °C
Boiling point or initial boiling point and boiling range	not determined
Flash point	not applicable
Evaporation rate	not determined
Flammability (solid, gas)	non-combustible
Explosive limits	not determined
Explosion limits of dust clouds	not determined
Vapor pressure	<0.1 hPa at 20 °C
Density and/or relative density	
Density	2.7 g/cm ³ at 20 °C
Relative density	2.7 at 20 °C (water = 1)
Relative vapour density	not relevant (solid)
Solubility(ies)	
Water solubility	64 g/l at 20 °C not miscible in any proportion
Partition coefficient	
n-octanol/water (log KOW)	not relevant (inorganic)
Auto-ignition temperature	not determined
Decomposition temperature	<240 °C
Viscosity	not relevant (solid)

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Explosive properties	none
Oxidizing properties	oxidizer
Information for relevant hazard classes according to GHS	there is no additional information

9.2 Other information there is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance.
Oxidizing property.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

Contact with combustible material may cause fire.
Liberation of excessive heat with: combustible materials, reducing agents, Explosive reaction with: combustible materials, reducing agents, Contact with acids liberates toxic gas: chlorine (Cl₂)

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Prevent from heating up above 240 °C.
Keep/store away from clothing/combustible materials.
Keep/store away from reducing substances.
Take any precaution to avoid mixing with combustibles.

10.5 Incompatible materials

acids, reducing agents, Combustible materials, powdered metals, peroxides, zinc, copper, alcohol, hydrogen fluoride (HF), ammonium compound, sulfur, phosphorus, arsenic, formaldehyde, hydrogen sulfide (H₂S), hydrogen chloride (HCl), hydrochloric acid

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.
Metal oxide smoke, toxic.
Potassium compound.
Manganese compound.
Oxygen.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

If not otherwise specified the classification is based on:
Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

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Acute toxicity

Shall not be classified as acutely toxic (dermal).

Harmful if swallowed.

(1272/2008/EC, Annex VI)

Inhalation.

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>2,000 mg/kg	rat, female	EU method B.1	ECHA
dermal	LD0	>2,000 mg/kg	rat	EU method B.3	ECHA

Skin corrosion/irritation

Causes severe burns.

(ECHA, EU method B.4)

Serious eye damage/eye irritation

Causes serious eye damage.

(ECHA)

Respiratory or skin sensitization

Skin sensitization

Shall not be classified as a skin sensitizer.

(ECHA, OECD Guideline 406)

Respiratory sensitization

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

(ECHA, EU method B.12, OECD Guideline 476, EU method B.13/14)

Carcinogenicity

IARC Monographs

not listed

National Toxicology Program (United States)

not listed

OSHA Carcinogens

Not listed.

Reproductive toxicity

Suspected of damaging the unborn child.

(ECHA, OECD Guideline 416)

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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Specific target organ toxicity - repeated exposure

May cause damage to organs (brain) through prolonged or repeated exposure (if inhaled).

Exposure route	Endpoint	Value	Exposure time	Species	Method
oral	NOAEL	40 mg/kg	28 d	rat	EU method B.7
dermal	NOAEL	150 mg/kg	28 d	rat	OECD Guideline 410
inhalation: dust/mist	NOAEL	20 µg/l		rat	OECD Guideline 416

Hazard category	Target organ	Exposure route
2	brain	if inhaled

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Based on available data, the classification criteria are not met.

Endpoint	Exposure time	Value	Species	Method	Source
LC50	96 h	0.47 mg/l	guppy (Poecilia reticulata)	EU method C.1	ECHA
EC50	48 h	0.06 mg/l	daphnia magna	EU method C.2	ECHA
EbC50	72 h	0.43 mg/l	algae (Desmodesmus subspicatus)	EU method C.3	ECHA
ErC50	72 h	0.8 mg/l	algae (Desmodesmus subspicatus)	EU method C.3	ECHA

Aquatic toxicity (chronic)

Based on available data, the classification criteria are not met.

Endpoint	Exposure time	Value	Species	Method	Source
NOEC	72 h	0.32 mg/l	algae (Desmodesmus subspicatus)	EU method C.3	ECHA

12.2 Persistence and degradability

Biodegradation

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The study does not need to be conducted because the substance is inorganic.

Persistence

The study does not need to be conducted because the substance is inorganic.

12.3 Bioaccumulative potential

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

n-octanol/water (log KOW)	not relevant (inorganic)
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12.4 Mobility in soil

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Other adverse effects

Data are not available.

Remarks

Keep away from drains, surface and ground water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packages

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

DOT	UN1490
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IMDG-Code	UN1490
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ICAO-TI	UN1490
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14.2 UN proper shipping name

DOT	Potassium permanganate
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IMDG-Code	POTASSIUM PERMANGANATE
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ICAO-TI	Potassium permanganate
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14.3 Transport hazard class(es)

DOT	5.1
IMDG-Code	5.1
ICAO-TI	5.1

14.4 Packing group

DOT	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards hazardous to the aquatic environment

14.6 Special precautions for user -

14.7 Transport in bulk according to IMO instruments -

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

Particulars in the shipper's declaration	UN1490, Potassium permanganate, 5.1, II, environmentally hazardous
Reportable quantity (RQ)	100 lbs (45.4 kg) (potassium permanganate)
Danger label(s)	5.1, fish and tree
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	IB8, IP2, IP4, T3, TP33
ERG No	140

International Maritime Dangerous Goods Code (IMDG) Additional information

Marine pollutant	yes (hazardous to the aquatic environment)
Danger label(s)	5.1, fish and tree
	
Excepted quantities (EQ)	E2

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Limited quantities (LQ)	1 kg
EmS	F-H, S-Q
Stowage category	D
Segregation group	14 - Permanganates.

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

Environmental hazards	yes (hazardous to the aquatic environment)
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Danger label(s)	5.1
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Excepted quantities (EQ)	E2
Limited quantities (LQ)	2,5 kg

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA) Substance is listed (ACTIVE)

Superfund Amendment and Reauthorization Act (SARA TITLE III)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed

Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings				
Name of substance	Name acc. to inventory	CAS No	Remarks	Effective date
potassium permanganate	manganese compounds		-	1987-01-01

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	Name acc. to inventory	CAS No	Re- marks	Stat- utory code	Final RQ pounds (Kg)
potassium permanganate	potassium permanganate	7722-64-7	-	1	100 (45,4)

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Legend

1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

Clean Air Act

Not listed

Right to Know Hazardous Substance List

Toxic or Hazardous Substance List (MA-TURA)

Name of substance	Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Thres hold	De Minimis Concentration Threshold
potassium permanganate	Manganese Compounds	-	1027	-	-	1.0 %
potassium permanganate	Lead Compounds	-	1026	PBT	100 LBS	none

Hazardous Substances List (MN-ERTK)

Name of substance	Name acc. to inventory	CAS No	References	Remarks
potassium permanganate	Manganese, elemental and compounds, as Mn	-	A, O	-

Legend

- A American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices for 1992-93", available from ACGIH
- O Occupational Safety and Health Administration (OSHA), Safety and Health Standards, Code of Federal Regulations, title 29, part 1910, subpart Z, "Toxic and Hazardous Substances, 1990." General information: Minnesota Department of Labor and Industry, Occupational Safety and Health Division

Hazardous Substance List (NJ-RTK)

Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications	Listed in	Substance number	DOT number
potassium permanganate	potassium permanganate	7722-64-7	-		3 17 18 20	1578	1490
potassium permanganate	manganese compounds	-	-		1 2 4 6 18 20	2324	-

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Legend

- 1 Occupational Safety and Health Administration, 29 CFR 1910-Occupational Safety and Health Standards, Subpart Z-Toxic and Hazardous Substances, July 1, 2008.
- 17 "2008 Emergency Response Guidebook," Research and Special Programs Administration, U.S. Department of Transportation, 2008.
- 18 List of Toxics Release Inventory Chemicals, Section 313, Emergency Planning and Community Right to Know Act (EPCRA), Toxics Release Inventory (TRI) Program, U.S. Environmental Protection Agency, 40 CFR 372.65, July 1, 2008.
- 2 "2009 TLVs® and BEIs®, Threshold Limit Values and Biological Exposure Indices," American Conference of Governmental Industrial Hygienists (ACGIH), 2009.
- 20 List of Hazardous Substances and Reportable Quantities (RQ), Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), U.S. Environmental Protection Agency, 40 CFR 302, Table 302.4, July 1, 2008.
- 3 Office of Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 49 CFR 172.101-Hazardous Materials Table, October 1, 2008.
- 4 "NIOSH Pocket Guide to Chemical Hazards," National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, No. 2005-149, September 2005.
- 6 "Environmental Hazardous Substance List," New Jersey Department of Environmental Protection, N.J.A.C. 7:1G-2, as printed in the Community Right to Know Survey Instruction Book, 2008.

Hazardous Substance List (Chapter 323) (PA-RTK)

Name acc. to inventory	CAS No	Classification
PERMANGANIC ACID (HMNO ₄), POTASSIUM SALT	7722-64-7	E
MANGANESE	7439-96-5	*, E

Legend

- * Any compound of this substance is also an environmental hazard
- E Environmental hazard

Hazardous Substance List (RI-RTK)

Name of substance	Name acc. to inventory	CAS No	References
potassium permanganate	Potassium permanganate	7722-64-7	F

Legend

- F Flammability (NFPA®)

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Not listed

Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

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Name of substance	Name acc. to inventory	CAS No	Listed in	Special conditions	Excluded transactions	DE A - code	Concentration limit
potassium permanganate	potassium permanganate	7722-64-7	List II chemicals	-	-	6579	15% by Weight

Legend

List II The term "list II chemical" means a chemical (other than a list I chemical) specified by regulation of the Attorney General as a chemical that is used in manufacturing a controlled substance in violation of this subchapter.

SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2021-09-01

Date of last revision: 2025-07-10.

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
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Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DEA	Drug Enforcement Administration
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)
DOT	Department of Transportation (USA)
EbC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
ERG No	Emergency Response Guidebook - Number
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations

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Abbr.	Descriptions of used abbreviations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IARC Mono-graphs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LHS	Lower hazard substance
NFPA®	National Fire Protection Association (United States)
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
ppm	Parts per million
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200 (May 20, 2024 eff. July 19, 2024).
Transport of dangerous goods by road or rail (49 CFR US DOT).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

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List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs (brain) through prolonged or repeated exposure (if inhaled).

Responsible for the safety data sheet

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Disclaimer

This information is based upon the present state of our knowledge.
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