

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 02/11/2020

Version 1.2

SECTION 1. Identification

Product identifier

Product number	PX1550
Product name	Potassium Permanganate GR ACS
CAS-No.	7722-64-7

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

Identified uses	Reagent for analysis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 400 Summit Drive Burlington Massachusetts 01803 United States of America General Inquiries: +1 800-645-5476 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Oxidizing solid, Category 2, H272
Acute toxicity, Category 4, Oral, H302
Skin corrosion, Category 1C, H314
Serious eye damage, Category 1, H318
Reproductive toxicity, Category 2, H361
Specific target organ systemic toxicity - repeated exposure, Category 2, Inhalation, Brain, H373

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

GHS-Labeling

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Hazard pictograms



Signal Word

Danger

Hazard Statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H361 Suspected of damaging fertility or 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.

P220 Keep/Store away from clothing/ combustible materials.

P221 Take any precaution to avoid mixing with combustibles.

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin 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 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 IF INHALED: Remove person to fresh air and keep 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/doctor.

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 to extinguish.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

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None known.

SECTION 3. Composition/information on ingredients

Formula KMnO_4 (Hill)
Molar mass 158.03 g/mol

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

Potassium permanganate ($\geq 90\%$ - $\leq 100\%$)
7722-64-7

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

Ingestion

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Nausea, Vomiting

Risk of corneal clouding.

Risk of blindness!

Irritation and corrosion, Cough, Shortness of breath

Indication of any immediate medical attention and special treatment needed

No information available.

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SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Has a fire-promoting effect due to release of oxygen.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

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Conditions for safe storage, including any incompatibilities

Dry.

Tightly closed. Do not store near combustible materials.

Store at room temperature.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Components

Basis	Value	Threshold limits	Remarks
<i>Potassium permanganate 7722-64-7</i>			
ACGIH	Time Weighted Average (TWA):	0.2 mg/m ³	Expressed as: as Mn
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m ³	Form of exposure: Fume. Expressed as: as Mn
	Short Term Exposure Limit (STEL):	3 mg/m ³	Form of exposure: Fume. Expressed as: as Mn
OSHA_TRANS	Ceiling Limit Value:	5 mg/m ³	Expressed as: as Mn
Z1A	Ceiling Limit Value:	5 mg/m ³	Expressed as: as Mn

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream.
Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	480 min

splash contact:

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Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.

These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	violet
Odor	odorless
Odor Threshold	Not applicable
pH	ca. 7 - 9 at 20 g/l 68 °F (20 °C)
Melting point	> 464 °F (> 240 °C) (decomposition)
Boiling point	No information available.

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Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	< 0.01 hPa at 68 °F (20 °C)
Relative vapor density	No information available.
Density	2.70 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	64 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: -1.73 (calculated) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	> 464 °F (> 240 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 2.
Bulk density	ca.1,300 - 1,600 kg/m ³

SECTION 10. Stability and reactivity

Reactivity

strong oxidizing agent

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Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Risk of explosion with:

powdered aluminum, Ammonia, ammonium compounds, arsenic, Dimethylformamide, acetic acid, Acetic anhydride, formaldehyde, oxidizable substances, Nitro compounds, phosphorus, pyridine, strong reducing agents, hydrochloric acid, sulfur, Titanium, sugars, ammonium nitrate, sulfuric acid, Combustible Liquids, Organic Substances, mineral acids, anhydrides, TRIFLUOROACETIC ACID, mineral wool

Alcohols, with, sulfuric acid

alkali salts, with, sulfuric acid

Risk of ignition or formation of inflammable gases or vapors with:

Acetaldehyde, Alcohols, antimony, Aldehydes, silanes, dimethyl sulfoxide, Ethylene glycol, ethanol, Hydrogen fluoride, organic solvent, glycerol, hydroxylamine, Organic Substances, oxalic acid, sulfuric acid, hydrogen sulfide, hydrogen peroxide, triethanolamine, Esters, BENZALDEHYDE

glycerol, with, sulfuric acid

sulfuric acid, with, Organic Substances

Exothermic reaction with:

Reducing agents, Nitric acid, carbides

Generates dangerous gases or fumes in contact with:

Hydrogen chloride gas

Conditions to avoid

Strong heating (decomposition).

Incompatible materials

no information available

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

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Acute oral toxicity

LD50 Rat: 750 mg/kg (RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach., Nausea, Vomiting

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract.

Acute dermal toxicity

LD50 Rat: > 2,000 mg/kg

OECD Test Guideline 402

Skin irritation

Rabbit

Result: Corrosive

OECD Test Guideline 404

Burns after prolonged exposure.

Eye irritation

Causes serious eye damage.

Risk of blindness!

Sensitization

Maximization Test Guinea pig

Result: negative

Method: OECD Test Guideline 406

Genotoxicity in vivo

In vivo micronucleus test

Rat

Result: negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

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In vitro mammalian cell gene mutation test

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

Carcinogenicity

No indication of carcinogenic activity.

CMR effects

Teratogenicity / Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

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

Routes of exposure: Inhalation

Target Organs: Brain

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

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

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

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

ACGIH

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

Further information

Manganese compounds are generally only very slightly absorbable via the gastrointestinal tract.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

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Product name

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Toxicity to fish

semi-static test LC50 *Poecilia reticulata* (guppy): 0.47 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

semi-static test EC50 *Daphnia magna* (Water flea): 0.06 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

Toxicity to algae

static test ErC50 *Desmodesmus subspicatus* (green algae): 0.8 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

static test NOEC *Desmodesmus subspicatus* (green algae): 0.32 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

Toxicity to bacteria

static test EC50 activated sludge: 164 mg/l; 180 min

OECD Test Guideline 209

Persistence and degradability

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -1.73

(calculated)

(Lit.) Bioaccumulation is not expected.

Mobility in soil

No information available.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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SECTION 14. Transport information

Land transport (DOT)

UN number UN 1490
Proper shipping name POTASSIUM PERMANGANATE
Class 5.1
Packing group II
Environmentally hazardous --

Air transport (IATA)

UN number UN 1490
Proper shipping name POTASSIUM PERMANGANATE
Class 5.1
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 1490
Proper shipping name POTASSIUM PERMANGANATE
Class 5.1
Packing group II
Environmentally hazardous --
Special precautions for user yes
EmS F-H S-Q

SECTION 15. Regulatory information

United States of America

SARA 313

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

Components

Potassium permanganate	7722-64-7	100 %
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SARA 302

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

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Components

Potassium permanganate

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Components

Potassium permanganate

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

DEA List I

Not listed

DEA List II

Listed

Components

Potassium permanganate

7722-64-7

US State Regulations

Massachusetts Right To Know

Components

Potassium permanganate

Pennsylvania Right To Know

Components

Potassium permanganate

New Jersey Right To Know

Components

Potassium permanganate

California Prop 65 Components

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

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P221 Take any precaution to avoid mixing with combustibles, heavy-metal compounds, acids and alkalis.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

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

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

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

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

Key or legend to abbreviations and acronyms used in the safety data sheet

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Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 02/11/2020

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

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