

## SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 02/11/2020

Version 1.4

### 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	Millipore (Canada) Ltd.   2149 Winston Park Dr.   Oakville   Ontario L6H 6J8   Canada   General Inquiries: +1 905 829 9500   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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<b>Emergency telephone</b>	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

None known.

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## SECTION 3. Composition/information on ingredients

Formula	KMnO <sub>4</sub> (Hill)
Molar mass	158.03 g/mol

### Hazardous ingredients

*Chemical name (Concentration)*

CAS-No.

*Potassium permanganate (>= 90 % - <= 100 % )*

7722-64-7

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## 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.

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### 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.

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### 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>			
CAD AB OEL	Time Weighted Average (TWA):	0.2 mg/m <sup>3</sup>	Expressed as: as Mn
CAD BC OEL	Time Weighted Average (TWA):	0.2 mg/m <sup>3</sup>	Expressed as: as Mn
CAD MB OEL	Time Weighted Average (TWA):	0.2 mg/m <sup>3</sup>	Expressed as: as Mn
CAD ON OEL	Time Weighted Average (TWAEV):	0.2 mg/m <sup>3</sup>	Expressed as: as Mn
OEL (QUE)	Time Weighted Average (TWA):	5 mg/m <sup>3</sup>	Form of exposure: Dust. 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](http://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.

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## **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 <sup>3</sup> 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 <sup>3</sup>

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### 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

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## **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.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

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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.

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## **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)

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

### Air transport (IATA)

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

### Sea transport (IMDG)

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

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## SECTION 15. Regulatory information

### United States of America

### Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

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## 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.

### 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.

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

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 02/11/2020

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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