

Material Safety Data Sheet

Version 4.4
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Pyridinium dichromate

Product Number : 214698
Brand : Aldrich

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
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Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Oxidizer, Carcinogen, Target Organ Effect, Corrosive

Target Organs

Lungs, Kidney

GHS Classification

Flammable solids (Category 1)

Oxidizing solids (Category 2)

Skin corrosion (Category 1B)

Carcinogenicity (Category 1B)

Carcinogenicity, Inhalation (Category 1B)

Acute aquatic toxicity (Category 1)

Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H228 Flammable solid
H272 May intensify fire; oxidiser.
H314 Causes severe skin burns and eye damage.
H350 May cause cancer.
H350i May cause cancer by inhalation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P220 Keep/Store away from clothing/ combustible materials.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
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.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard: 3
Chronic Health Hazard: +
Flammability: 0
Physical hazards: 2

NFPA Rating

Health hazard: 3
Fire: 0
Reactivity Hazard: 2
Special hazard.: OX

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : PDC

Formula : $C_{10}H_{10}N_2 \cdot H_2Cr_2O_7$

Molecular Weight : 376.2 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Pyridinium dichromate			
20039-37-6	243-478-8	024-017-00-8	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

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

In case of skin contact

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

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

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

5. FIRE-FIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

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

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Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Chromium oxides

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

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

Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition.

Conditions for safe storage

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

Handle and store under inert gas. Hygroscopic.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Pyridinium dichromate	20039-37-6	TWA	0.005 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		CEIL	0.001 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z2
		CEIL	0.1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
Remarks	Substance listed; for more information see OSHA document 1910.1026			
	See 1910.1026. See Table Z-2 for the exposure limit for any operations or sectors where the exposure limit in 1910.1026 is stayed or are otherwise not in effect.			

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

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

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

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

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	crystalline
Colour	orange, yellow

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 152 - 153 °C (306 - 307 °F) - lit.
Boiling point	no data available
Flash point	no data available
Flammability (solid, gas)	The substance or mixture is a flammable solid with the subcategory 1. - Flammability (solids)
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	0.0000001 hPa (0.0000001 mmHg) at 25 °C (77 °F)
Density	1.713 g/cm3
Water solubility	943 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - clear
Partition coefficient: n-octanol/water	log Pow: < -3.7 at 20 °C (68 °F)
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Organic materials, Powdered metals

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Chromium oxides

Other decomposition products - no data available

Thermal decomposition

ca.177 - 298 °C - Decomposes on heating.

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Oral LD50**

no data available

Inhalation LC50

no data available

Dermal LD50

no data available

Other information on acute toxicity

no data available

Skin corrosion/irritation

Skin - Mammal - Causes burns. - 1 h - EPISKIN Human Skin Model Test

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

Genotoxicity in vitro - Ames test - S. typhimurium - with or without metabolic activation - Positive results were obtained in some in vitro tests.

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Presumed to have carcinogenic potential for humans

IARC: 1 - Group 1: Carcinogenic to humans (Pyridinium dichromate)

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

NTP: Known to be human carcinogen (Pyridinium dichromate)

OSHA: 1910.1026 (Pyridinium dichromate)

Reproductive toxicity

no data available

Teratogenicity

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no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects**Inhalation**

May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin. Causes skin burns.

Eyes

Causes eye burns.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION**Toxicity**

no data available

Toxicity to daphnia and other aquatic invertebrates.

static test EC50 - Daphnia - 0.91 mg/l - 48 h
Method: OECD Test Guideline 202

static test EC0 - Daphnia - 0.24 mg/l - 48 h
Method: OECD Test Guideline 202

static test EC100 - Daphnia - 3.1 mg/l
Method: OECD Test Guideline 202

Toxicity to algae

static test EC50 - Scenedesmus capricornutum (fresh water algae) - 0.14 mg/l - 72 h
Method: OECD Test Guideline 201

static test ErC50 - Scenedesmus capricornutum (fresh water algae) - 1.05 mg/l - 72 h
Method: OECD Test Guideline 201

Persistence and degradability

Biodegradability

aerobic

Result: 4.7 % - According to the results of tests of biodegradability this product is not readily biodegradable.

Method: OECD Test Guideline 301

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.
no data available

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1479 Class: 5.1 Packing group: II
Proper shipping name: Oxidizing solid, n.o.s. (Pyridinium dichromate)
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 1479 Class: 5.1 Packing group: II EMS-No: F-A, S-Q
Not permitted for transport (Pyridinium dichromate)
Marine pollutant: No

IATA

UN number: 1479 Class: 5.1 Packing group: II
Proper shipping name: Oxidizing solid, n.o.s. (Pyridinium dichromate)

15. REGULATORY INFORMATION

OSHA Hazards

Oxidizer, Carcinogen, Target Organ Effect, Corrosive

SARA 302 Components

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

SARA 313 Components

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

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SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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

Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Pyridinium dichromate	CAS-No. 20039-37-6	Revision Date 1987-02-27
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California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
Pyridinium dichromate

CAS-No.
20039-37-6

Revision Date
1987-02-27

16. OTHER INFORMATION

Further Information

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