



Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of Compilation	: July 24, 2014
Date of Revision	: March 29, 2024
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Revision Number	: 07
Version Name	: 0042Gj Ghs07 Div.03 sds Pyridinium p-toluenesulfonate
Supersedes version	: 0042Gj Ghs06 Div.03 sds Pyridinium p-toluenesulfonate
Supersedes date	: January 02, 2024

Pyridinium p-toluenesulfonate

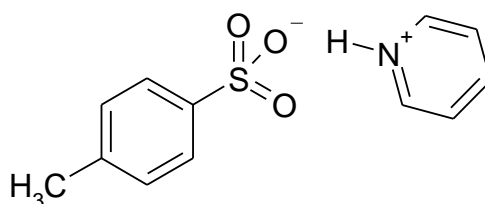
Safety Data Sheet

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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

Product Identifier

Product name	: Pyridinium p-toluenesulfonate
CAS RN	: 24057-28-1
EC Number	: 246-002-7
Synonyms	: 4-methylbenzenesulfonate; pyridin-1-ium
Systematic name	: Pyridinium p-toluenesulfonate
Molecular formula	: C ₁₂ H ₁₃ NO ₃ S
Structural formula	:



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

Relevant identified uses: Pyridinium p-toluenesulfonate is used as an intermediate in the synthesis of Tacrolimus drug used for immunosuppressive activity and Orlistat drug used to treat obesity

Uses advised against: No information available

Details of the supplier of the safety data sheet

FACTORY & REGISTERED OFFICE:

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Emergency telephone number

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident) Call

Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)

Chemtrec (India) : 000-800-100-7141

For ALL other emergencies call Emergency Control Room Gajraula at 99970 22412

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

GHS-US classification:

Skin Corrosion / Irritation: (Category 2)

Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Eye Damage/ Irritation: Category 2A

Specific Target Organ Toxicity (Single Exposure): Category 3

Label Elements

Hazard Pictogram: GHS 07

Signal Word: Warning!



GHS 07

Hazard and Precautionary Statements:

HAZARD STATEMENTS

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

P264: Wash hands thoroughly after handling.

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

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P271: Use only outdoors or in a well-ventilated area

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P332 + P313: If skin irritation occurs: Get medical advice/attention.

P362: Take off contaminated clothing and wash before reuse.

P305 + P351 + P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P337 + P313: If eye irritation persists: Get medical advice/attention.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P405: Store locked up.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance	CAS Number	EC Number	Purity
Pyridinium p-toluenesulfonate	24057-28-1	246-002-7	> 98 %



Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 4: FIRST AID MEASURES

Description of first aid measures:

- **Eyes:** If in eyes rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek medical attention.
- **Skin:** Immediately take off all contaminated clothing. Wash thoroughly with water for at least 15 minutes. Wash contaminated clothes before reuse. Seek immediate medical attention.
- **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell.
- **Ingestion:** If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek medical attention.

Most important symptoms and effects, both acute and delayed:

Acute effects:

- It is irritating to skin, eyes and respiratory system.

Chronic effects:

- Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Indication of any immediate medical attention and special treatment needed.

- Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

- Dry chemical powder, carbon dioxide, and alcohol resistant foam. Water may also be used. Water sprays can be effective in cooling down the fire-exposed containers and knocking down the vapors. Water jets may be used to flush spills away and dilute the same to non-flammable mixtures.

Special hazards arising from the substance or mixture

- **Fire hazard:** During a fire, thermal decomposition or combustion may generate irritating and highly toxic gases. Vapor is heavier than air and may travel along the ground to distant ignition sources and flash back. Vapors may accumulate in a confined area and form explosive mixture. Emits toxic fumes under fire conditions.
- **Explosion hazard:** High vapor concentration may result in an explosion hazard.
- **Reactivity in case of fire:** Do not get water inside the containers.
- **Hazardous decomposition products in case of fire:** Development of hazardous combustion gases or vapors possible in the event of fire. Combustion Products are toxic carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂), Sulphur oxides

Advice for firefighters

- **Precautionary measures fire:** Appropriate self-contained breathing apparatus may be required.
- **Firefighting instructions:** Use water spray or fog for cooling exposed containers. Exercise caution when



Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

fighting any chemical fire. In case of major fire, evacuate area.

- **Protective equipment for firefighters:** Do not enter fire area without proper protection equipment, including respiratory protection

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.
- Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid contact with skin and eyes.
- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.

Environmental precautions

- Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and materials for containment and cleaning up

- Clean up all spills immediately following relevant Standard Operating Procedures.
- Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust.
- Place spillage in appropriately labeled container for disposal. Wash spill site.

Reference to other sections

- For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

- Do not breathe dust, vapor or mist.
- If on skin or hair, IMMEDIATELY remove all contaminated clothing and rinse/shower with plenty of water.
- Use in a well-ventilated place/Use protective clothing commensurate with exposure levels.
- Handle in accordance with good industrial hygiene and safety procedures. Avoid Prolonged or repeated exposure. Take precautionary measures against electrostatic discharge

Storage

- Store at ambient temperature in a dry and well-ventilated place. Keep container tightly closed when not in use.
- Keep away from all heat sources, including direct sun-light, open flame, source of ignition, sparks etc.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 : Control parameters

Exposure Limits Values



Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Pyridinium p-toluenesulfonate	Not listed	Not listed	Not listed

8.2 : Exposure Limits (International)

- Not Available

8.3 Derived No-Effect-Levels (DNEL) Predicted No-Effect-concentration (PNEC)

- Not Available

8.4 : Exposure controls

Appropriate Engineering Controls:

- Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Local ventilation is usually preferred. Ensure that eyewash stations and safety showers are close to the workstation location.

8.5 : Personal Protection

- Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
- **Hands:** Wear appropriate protective gloves to prevent skin exposure.
- **Eyes:** Safety goggles/ Chemical Safety glasses and Face shield.
- **Clothing:** Boots and clothing to prevent contact.
- **Respirator:** Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

8.6 : Occupational hygiene

- Take heed of usual occupational hygiene measures when handling chemical substances, especially wash the skin with soap and water before breaks and at the end of work and apply fatty skin-care products after washing.
- Avoid contact with eyes. In case of contact rinse the affected eye(s).
- Change clothing that has become wet and do not reuse until completely dry.
- Increased risk of combustion from wicking.

8.7 : Additional Information

- Only use protective equipment in accordance with national/international regulations. Follow the national regulation about wearing personal protective equipment and the warranty given.
- Apply skin protective barrier cream
- Do not inhale substances, work under hood.

8.8 : Control of environmental exposure

- Do not let product enter drains.
- Wash hands and face after working with the substance.
- Under no circumstances eat or drink at the workplace.

Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

- Do not inhale substances, work under hood.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr. No.	Parameter	Typical value
1.	Appearance	White to off white crystalline
2.	Molecular weight	251.3
3.	Odor	Not Available
4.	Odor Threshold	Not Available
5.	pH	1.5-2.5(5%aqueous solution)
6.	Melting point	117-120 °C at 101 325 Pa
7.	Boiling point	Decomposes above approximately 270°C. No boiling point observed up to 400 °C
8.	Flash point	Not Available
9.	Evaporation rate (n-BuAc=1)	Not Available
10.	Flammability	Not flammable
11.	Upper/lower flammability or Explosive limits	Not Available
12.	Vapor pressure	40 Pa at 20 °C
13.	Vapor density (air=1)	Not Available
14.	Relative Density	1.22 at 20 °C
15.	Solubility	Soluble in water (> 700 g/L), methanol and ethanol.
16.	Partition coefficient (Octanol /water)	< 1 at 25 °C
17.	Auto-ignition temperature	>130°C
18.	Decomposition temperature	Not Available
19.	Viscosity	Not Available
20.	Explosive property	Non explosive
21.	Oxidizing property	Non oxidising

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** No data available
- **Chemical Stability:** Stable under recommended storage condition
- **Possibility of Hazardous Reactions:** No special reactivity has been reported.
- **Conditions to avoid:** Incompatible materials, ignition sources, excess heat, strong acids, strong oxidants, exposure to moist air or water. Store in tightly closed containers in a cool, well-ventilated area. Avoid dust generation.
- **Incompatible chemicals:** Strong oxidizing agents, moisture
- **Hazardous decomposition:** Thermal decomposition may produce nitrogen oxides, Carbon monoxide, sulphur oxides, nitrogen, irritating and toxic fumes and gases.
- **Hazardous Polymerization:** Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 : Information on toxicological effects

- Acute toxicity: Pyridinium p-toluenesulfonate is irritating to skin, eyes and respiratory system.
RTECS # : Not listed
LD50/ LC50 : Not available.
- **Skin irritation** : Causes skin irritation.
- **Serious eye irritation** : Causes serious eye irritation.
- **Respiratory or skin sensitization** : No data available
- **Germ cell Mutagenicity** : No data is available
- **Carcinogenicity** : Not listed by NTP, IARC and OSHA.
: Not present on the EU CMR list.
: According to the information presently available Pyridinium p-toluenesulfonate has not been tested for its ability to cause cancer in animals.
- **Reproductive toxicity** : No data available.
- **STOT-single exposure** : May cause irritation to respiratory system
- **STOT- repeated exposure** : No data available
- **Aspiration Hazards** : No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 : Eco toxicity

- Short-term toxicity to fish : LC50 for freshwater fish: > 10 mg/L (threshold approach)
- Short-term toxicity to aquatic invertebrates: EC50/LC50 for freshwater invertebrates (Daphnia magna): > 100 mg/L
- Toxicity to aquatic algae and cyanobacteria: EC50 for freshwater algae: 3 mg/L
EC10 or NOEC for freshwater algae: 0.34 mg/L
- Toxicity to microorganisms: EC50 for microorganisms > 1000 mg/L
EC20 for microorganisms 128 mg/L
NOEC for microorganisms < 10 mg/L
- Based on the estimated value it is expected to be non-toxic to aquatic organisms.

12.2 : Persistence and degradability

- It is expected to be readily biodegradable in aerobic and anaerobic conditions.

12.3 : Bio accumulative potential

- BCF = 3.2
- Log Kow = < 1
- Based on the Log Kow and Bio concentration factor value it is expected to have low potential to



Pyridinium p-toluenesulfonate

Safety Data Sheet

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concentrate in fatty tissue of fish and aquatic organisms.

12.4 : Mobility in soil

- Koc at 25 °C: < 17.8 (Log Koc < 1.25)
- Henry's Law Constant = 1.1×10^{-5} atm/m³ mole at 25 degrees. It is slightly volatile from aqueous bodies.
- Log Kow= < 1. Low potential to bioaccumulate.

12.5 : Other adverse effects

- Based on the environmental modeling, this material has a low potential to get absorbed in the organic matter of soil and is slightly volatile from water bodies. Since this is an estimated result it is recommended that the material should not be disposed into the environment. The material should never be disposed into the sewage.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 : Waste treatment methods

- Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system.
- Contact a licensed professional waste disposal service to dispose of this material.
- Dispose in a safe manner in accordance with local/national regulation. Observe all federal, state and local environmental regulation.

SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be non-Hazardous for transport by Air/ Rail/ Road and Sea and thus not regulated by IATA/ ICAO/ US DOT/ IMO/ IMDG.

	ADR/ RID/ DOT	IMDG	IATA
14.1 UN number	Not Applicable	Not Applicable	Not Applicable
14.2 UN proper shipping name	Not Applicable	Not Applicable	Not Applicable
14.3 Transport hazard class(es)	Not Applicable	Not Applicable	Not Applicable
14.4 Packing group	Not Applicable	Not Applicable	Not Applicable
14.5 Environmental hazards	Marine Pollutant: No	Marine Pollutant: No	Marine Pollutant: No

SECTION 15: REGULATORY INFORMATION



Pyridinium p-toluenesulfonate

Safety Data Sheet

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Classification as per CLP Regulation 1272/2008:

Hazards Class and Category:

Skin Corrosion / Irritation: (Category 2)

Eye Damage/ Irritation: Category 2A

Specific Target Organ Toxicity (Single Exposure): Category 3

Hazard Statements: H315, H319, H335

Chemical Inventory Lists:	Status
TSCA:	Listed (Active)
EINECS:	Listed
EC Inventory	246-002-7
Canada(DSL/NDSL):	Listed (DSL)
China Catalog of Hazardous chemicals 2022	Not Listed
New Zealand Inventory of Chemicals (NZIoC)	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed
Inventory of Existing and New Chemical Substances (ENCS)	Listed
Japan ISHL Existing Substances List (ISHL)	Not Listed
China: IECSC	Listed
Existing Chemicals List (KECI)	Listed
Australian Inventory of Chemical Substances (AICS)	Listed

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): Pyridinium p-toluenesulfonate not listed

SARA 302/304 : Pyridinium p-toluenesulfonate not listed

SARA 311/312 : See section 2 for more information

California Prop. 65: Pyridinium p-toluenesulfonate not listed

CAA (Clean Air Act): Pyridinium p-toluenesulfonate not listed

CWA (Clean Water Act): Pyridinium p-toluenesulfonate not listed

EU Information

Water hazard class (WGK): WGK 2 (obviously hazardous to water)

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006:

Pyridinium p-toluenesulfonate not listed

SECTION 16: OTHER INFORMATION

a) : Compilation information of safety data sheet

Date of Compilation : July 24, 2014

Date of Revision : March 29, 2024

Jubilant Ingrevia Limited



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Supersedes date	: January 02, 2024

b) A key or legend to aberrations and acronyms used in the safety data sheet

SCBA	= Self Contained Breathing Apparatus.
NIOSH REL	= National Institute for Occupational Safety and Health Recommended Exposure Limit.
OSHA PEL	= Occupational Safety and Health Administration Permissible Exposure Limit.
RTECS	= Registry of Toxic Effects of Chemical Substances.
IARC	= International Agency for Research on Cancer.
TSCA	= Toxic Substances Control Act.
DSL/NDSL	= Domestic/Non-Domestic Substances List.
TLV	= Threshold Limit Value.
ACGIH	= American Conference of Governmental Industrial Hygienists.
REACH	= Registration, Evaluation .Authorization and Restriction of Chemicals.
CLP	= Classification, Labeling and Packaging.
GHS	= Globally Harmonized System.
IMDG-Code	= International Maritime Code for Dangerous Goods.
ICAO	= International Civil Aviation Organization.
IATA/ DGR	= International Air Transport Association/Dangerous Goods Regulation.
SDS	= Safety Data Sheet
IECSC	= Inventory of Existing Chemical Substances Produced or Imported in China
TSCA	= Toxic Substances Control Act Inventory
NZIoC	= New Zealand Inventory
ENCS	= Inventory of Existing and New Chemical Substances
KECI	= Existing Chemicals List
PICCS	= Philippine Inventory of Chemicals and Chemical Substances
AICS	= Australian Inventory of Chemical Substances
DSL	= Domestic Substances List
NDSL	= Non-domestic Substances List

c) Key Literature reference and sources for data

Biographical reference and data sources

- Globally Harmonized System of Classification and Labelling of Chemicals.
- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 878/2020

SDS US (GHS HazCom 2012)



Pyridinium p-toluenesulfonate

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

(End of Safety Data Sheet)
