

Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: Parylene AF4
Company: Yuan-Shin Materials Technology Corp.
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Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
3345-29-7	Octafluoro-(2,2)-paracyclophane	99% min.	unlisted
Synonym: 1,1,2,2,9,9,10,10-Octafluoro-(2,2)-paracyclophane; a-Perfluorodi-p-ylene; AF4			

Section 3 - HAZARDS IDENTIFICATION

Emergency Overview

Nonflammable harmful solid.

The toxicological properties of this material have not been fully investigated.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: The toxicological properties of this substance have not been fully investigated.

Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic: Not available.

Section 4 - FIRST AID MEASURES

Route(s) of Entry: Inhalation, Skin, Ingestion.

Oral Exposure

If swallowed, wash mouth out with water. Get medical aid.

Inhalation Exposure

If inhaled, remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Dermal Exposure

In case of contact, immediately wash skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid.

Eyes Exposure

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Section 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Water spray, carbon dioxide, dry chemical powder, or appropriate foam.

Special Fire Fighting Procedures

Use Self-contained respirator and full Protective clothing. Unusual Fire and Explosion Hazards: Combustible. Emits toxic fumes under fire conditions.

Fire Fighting Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Section 6 - ACCIDENTAL RELEASE MEASURES

Procedures to be followed in Case of Leak or Spill

Vacuum or sweep up material and place into a suitable disposal container.

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Absorb on sand or vermiculite for disposal. Ventilate area and clean spill site. Place in covered containers and transport outdoors. Ventilate area and wash spill site after material pickup is done

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber. Observe federal, state, and local environmental regulations.

Section 7 - HANDLING and STORAGE

Handling:

Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.

Storage:

Keep container closed. Keep away from heat and open flame. Store in a cool dry place.

Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Storing Precautions:

Wear protective clothing. Use only in fume hood. Avoid contact. Keep container closed. Keep away from heat and open flame. Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment**Eyes:**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: light yellow and white crystal

Vapor Pressure: 0.0211 mmHg at 25°C

Boiling Point: not available

Melting Point: 249.5°C

Specific Gravity: 1.47 g/cm³

Flash Point: 96 °C

Auto-ignition Temperature: not available

Decomposition Temperature: not available

PH: not available

Molecular Formula: C₁₆H₈F₈

Solubility: Insoluble in water. Soluble in Acetone, CHCl₃, DMAC...

Section 10 - STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Keep away from heat and open flame.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Toxic fumes of CO, CO₂., HF.

Hazardous Polymerization: Has not been reported.

Section 11 - TOXICOLOGICAL INFORMATION

RTECS#

Not available

Carcinogenicity

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. See actual entry in RTECS for complete information.

Section 12 - ECOLOGICAL INFORMATION

EC₅₀ (48hr): not available

LD₅₀ : not available

Section 13 - DISPOSAL CONSIDERATIONS

Waste disposal methods

This material should be kept out of sewage and drainage systems. Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - TRANSPORT INFORMATION

This material is not hazardous as defined by 49 CFR 172.101 by the U.S. Department of Transportation.

Proper shipping name: Octafluoro-(2,2)-paracyclophane

Hazard class number and description: Not applicable

UN identification number: Not applicable

Dot label(s) required: Not applicable

Packaging group: Not applicable

North American response guidebook number (2000): Not applicable

Marine pollutant: The components of this product are not listed as marine pollutants as per D.O.T. (49 CFR 172.101, Appendix B).

Transport Canada Transportation of Dangerous Goods Regulations

This material is not considered as dangerous goods by regulations of Transport Canada.

International Air Transportation Association Designation (IATA)

This material is not considered as dangerous goods by the IATA.

International Maritime Organization Designation (IMO)

This material is not considered as dangerous goods by the IMO.

European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)

This material is not considered as dangerous goods by the United Nations Economic Commission for Europe.

Section 15 - REGULATORY INFORMATION

Safety Statements

Keep container tightly closed. Keep away from sources of ignition. Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases: Not available.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

Observe federal, state and local laws.

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee expressed or implied is made regarding the performance or stability of any product, since the manner of use and condition of storage and handling is beyond our control. No suggestion for product use, nor anything contained herein, shall be construed as a recommendation for its use in infringement of any existing patent.

Warranty

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

Section 16- Other Information

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Prepared by: Yuan-Shin Materials Technology Corp.