

Material Safety Data Sheet

Part No. 1315-0075 B
November 1996

1. Chemical Product and Company Identification

Chemical Name: PAE-2/Cyclohexanone

Synonyms: Poly(arylene ether)/Cyclohexanone

Chemical Family: Polymer solution

Formula: $(C_{37}H_{24}O_2)_x / C_6H_{10}O$

Molecular Weight: $(500.6)_x / 98.2$

CAS#: Not Available/108-94-1

SCHUMACHER, 1969 PALOMAR OAKS WAY, CARLSBAD, CA 92009 • EMERGENCY PHONE NUMBERS:
8:00 AM TO 5:00 PM PST Monday thru Friday, call: (619) 931-9555. AFTER HOURS CALL: 1-800-523-9374;
IN PENNSYLVANIA: 1-800-322-9092; OUTSIDE THE USA: 610-481-7711.

2. Composition

Chemical Name	CAS#	% by weight
Poly(arylene ether)	Not Available	1-10
Cyclohexanone	108-94-1	99-90

3. Hazards Identification

Emergency Overview: Clear, colorless to yellow liquid. Cyclohexanone is corrosive, causes burns to the eyes, skin and mucous membranes. Avoid exposure to oxidizers. Cyclohexanone is a combustible liquid.

Potential Health Effects

Inhalation: To the best of our knowledge there has been no clinical experience with overexposure by respiration.

Eye Contact: Causes burns to the eyes.

Skin Contact: Cyclohexanone is readily absorbed through the skin. Causes burns to the skin.

Ingestion: Harmful by ingestion. Cyclohexanone is toxic.

Chronic/Carcinogenicity: To the best of our knowledge the chemical, physical and toxicological properties of this material have not been determined. IARC Cancer review: 3 Not listed as carcinogenic by NTP and OSHA.

4. First Aid Measures

Inhalation: Remove to fresh air. Give artificial respiration if not breathing. Oxygen may be given by qualified personnel if breathing is difficult. Get immediate medical attention.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get immediate medical attention.

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Skin Contact: Remove contaminated clothing. Immediately flush with plenty of water. Get medical attention.

Ingestion: If conscious, rinse mouth with water. Get immediate medical attention.

5. Fire Fighting Measures

Flash Point (Test Method): Cyclohexanone: 46°C

Auto-Ignition Temperature: Cyclohexanone: 420°C

Flammable Limits in Air, % by volume: Cyclohexanone: UEL 9.4%, LEL 1.1%

Extinguishing Media: Use water spray, dry chemical or carbon dioxide. For larger fires flood fire area with water from a distance. Water fog is useful for cooling fire-exposed containers and dispersing vapors.

Special Fire Fighting Procedures: Use positive pressure self-contained breathing apparatus (SCBA) and appropriate personal protective equipment (PPE).

Unusual Fire and Explosion Hazards: Combustible liquid. Exposure to oxidizing agents may result in a sudden reaction and fire. Emits toxic fumes under fire conditions.

6. Accidental Release Measures

Isolate hazard area. Eliminate ignition sources. Keep unnecessary and unprotected personnel from entering. In emergency situation or if the airborne concentration is unknown, use positive pressure SCBA and appropriate PPE. See Exposure Control/ Personal Protection section. Absorb spill with vermiculite or other inert absorbent. Place in appropriate chemical waste container.

7. Handling and Storage

Store in a cool dry area. Avoid heat, sparks and open flame. Keep tightly closed. When handling this material use appropriate personal protective equipment. Avoid breathing vapors and skin contact.

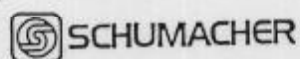
8. Exposure Control/Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below Exposure Guidelines. Also, an eyewash and safety shower should be readily accessible.

Respiratory Protection: Wear a full-face respirator with organic vapor cartridge(s) when the airborne concentration is less than 700 ppm. When there is an emergency situation or the airborne concentration is unknown, wear a positive pressure air-supplied respirator (SCBA).

Skin Protection: When chemical contact is possible, wear butyl rubber gloves, work uniform, splash apron and shoes.

Eye Protection: Wear approved chemical safety goggles or safety glasses with side shields and a full face shield.



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Exposure Guidelines: NIOSH 25 ppm, OSHA 50 ppm, ACGIH TLV-TWA 25 ppm (skin), IDLH 700 ppm

9. Physical and Chemical Properties

Boiling Point:	Cyclohexanone: 155°C	Freezing Point:	Cyclohexanone: -47°C
Specific Gravity (H₂O=1):	0.947	Vapor Pressure at 20°C:	3.4 Torr
Vapor Density (air=1):	3.4	Solubility in Water, % by wt.:	Cyclohexanone: 15%
Percent Volatile by Volume:	90-99%	Evaporation Rate:	Not Available
Appearance and Odor:	Clear, colorless to yellow liquid.	pH:	6.5-7.5

10. Stability and Reactivity

Chemical Stability:	Stable
Conditions to Avoid:	Heat, sparks and open flame.
Incompatibility (Materials to Avoid):	Oxidizers, strong reducing agents, strong bases and plastics. Violent reaction with nitric acid.
Hazardous Decomposition Products:	Carbon monoxide, carbon dioxide.
Hazardous Polymerization:	Will not occur.

11. Toxicological Information

Toxicology: To the best of our knowledge the chemical, toxicological and physical properties of this material have not been thoroughly investigated. No edema or erythema observed in rats treated with poly(arylene ether). Cyclohexanone is extremely destructive to the mucous membranes, skin and eyes. Inhalation may be fatal due to spasm, inflammation and edema of the throat, chemical pneumonitis, pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, difficulty breathing, headache, nausea and vomiting. Target organs: liver, kidneys, central nervous system and lungs.

Poly(arylene ether):
Rat LD50: >2000 mg/kg
Cyclohexanone:

Orl-rat LD50: 1620 µl/kg
Ihl-rat LC50: 8000 ppm/4h

Orl-mus LD50: 1400 mg/kg
skn-rbt LD50: 1 ml/kg

12. Ecological Information

Data not yet available.

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13. Disposal Considerations

EPA Waste Numbers: None

Consult an expert for disposal. Any disposal must be in compliance with local, state and federal laws and regulations. Contact local, state or federal administering agency for specific regulations.

14. Transport Information

DOT Description

Proper Shipping Name: Cyclohexanone Mixture

Hazard Class: 3

UN or ID Number: UN1915

UN Description

Proper Shipping Name: Cyclohexanone Mixture

Class or Division: 3

Packing Group: III

UN or ID Number: UN1915

15. Regulatory Information

OSHA:

Hazard Communication Standard (29CFR1910.1200): Yes

TSCA status:

Cyclohexanone: Listed in the TSCA Inventory
Poly(arylene ether): Not listed in the TSCA Inventory

CERCLA Reportable Quantity (R.Q.):

Not Established

SARA Title III:

- Section 302 Extremely Hazardous Substance: NE
- Section 311/312 Hazard Categories: NE
- Section 302 Threshold Planning Quantity (TPQ): NE
- Section 313: NE

16. Other Information

- This material is for research and development use only.

National Fire Protection Association Rating - Hazardous Materials Identification System

	NFPA	HMIS
HEALTH	3	3
FIRE	2	2
REACTIVITY	1	1
SPECIAL	N/A	*

(4 = Extreme/Severe, 3 = High/Serious, 2 = Moderate, 1 = Slight, 0 = Minimum, W = Water Reactive, N/A = Not Applicable, * = See Exposure Control/Personal Protection section, NE = Not Established)