

APS-D4

Section 1. Product and Company Identification

Product Name:	APS-D4
Chemical Name/Family:	Octamethylcyclotetrasiloxane
CAS No.:	556-67-2
Product Use:	Dispersant; Cleaning Agent; Paint Additive
Restrictions:	For Industrial Use Only
Company:	Advanced Polymer, Inc.
Address:	400 Paterson Plank Road Carlstadt, NJ 07072 U.S.A.
Telephone:	201-933-0600
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24 Hour Emergency Number	800-424-9300
24 Hour Chemtrec Number	800-424-9300

Section 2. Hazards Identification

GHS Classification:

Flammable liquids	Category 3
Reproductive toxicity	Category 2
Hazardous to the aquatic environment, long-term hazard	Category 4

GHS Label:**Symbol:****Signal Word:** **Warning****Hazard Classification:****Hazard Statement:**

- Flammable liquid and vapour
- Suspected of damaging fertility or the unborn child
- May cause long lasting harmful effects to aquatic life

Precautionary Statement:**Prevention**

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Use personal protective equipment as required.
 Avoid release to the environment.

Response

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 In case of fire: Use water fog, foam, dry chemical, carbon dioxide for extinction.
 IF exposed or concerned: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal

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

Potential Health Effects: None known.

Section 3. Composition/Information on Ingredients

Ingredients	CAS No.	Percent
Octamethylcyclotetrasiloxane	556-67-2	100

Section 4. First Aid Measures

Skin Contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Get medical attention if irritation develops and persists.

Eye Contact: Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Direct contact with eyes may cause temporary irritation.

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

Ingestion: Rinse mouth. Get medical attention immediately.

General Information: Treat symptomatically. If exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the materials(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

Section 5. Firefighting Measures

Specific Hazards in Case of Fire:	Flammable liquid and vapor. By heating and fire, harmful vapors/gases may be formed. In case of fire and/or explosion do not breathe fumes.
Fire Extinguishing Media:	Water fog, foam, dry chemical powder, carbon dioxide.
Unsuitable Extinguishing Media:	Do not use a solid water stream as it may scatter and spread fire.
Special Protective Equipment and Precaution for Firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
Unusual Fire & Explosion Hazards:	No information available.

Section 6. Accidental Release Measures

Personal Precautions:	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment.
Protective Equipment:	Wear necessary personal protective equipment. Ventilate area.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Avoid release to the environment.
Methods and Materials for Containment and Cleaning up:	<p>Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large spills: Stop the flow of material if this can be done without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand, or earth to soak up the product and place it into a container for later disposal. Prevent entry into waterways, sewers, basements, or confined areas.</p> <p>Small spills: Wipe up with absorbent material (e.g., cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use.</p>

Section 7. Handling and Storage

Handling Conditions:	Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Do not empty into drains. Pregnant or breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid prolonged exposure.
Storage Conditions:	Store in a well ventilated area above 64°F (>18°C) preferably 64°F – 104°F (18°C – 40°C). Store in a cool, dry place out of direct sunlight. Store locked up. Keep container tightly closed. Keep away from heat sparks and open flame. Store away from incompatible materials. If the product freezes, allow the product to thaw then mix thoroughly. Product quality testing should be performed before using.

Section 8. Exposure Control/Personal Protection

Exposure Limits:	U.S. Workplace Environmental Exposure Level (WEEL) Guides Octamethylcyclotetrasiloxane (CAS # 556-67-2): 10 ppm TWA
Appropriate engineering controls:	Explosion-proof general and local exhaust ventilation.
Personal protective equipment:	
Respiratory Protection:	In case of insufficient ventilation, wear suitable respiratory equipment. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.
Hand Protection:	Wear protective gloves.
Eye Protection:	Tightly sealed safety glasses according to EN166.
Skin and Body Protection:	Suitable protective clothing.
Other Protective Equipment:	Eyewash station and safety shower station
Hygiene Measures:	When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

Section 9. Physical and Chemical Properties

Physical State:	Liquid
Color:	Colorless, clear
Odor:	Slight odor
Odor Threshold:	No information available
% Non-volatile by Weight:	No information available
pH:	N/A
Specific Gravity (77°F):	~0.95
% Volatile by Weight:	No information available
Melting Point/Freezing Point:	63.9°F (17.7°C)
Boiling point:	347°F (175°C)
Flash Point:	123.8°F – 131°F (51°C-54°C) Closed Cup
Evaporation Rate (BuAc=1):	<1
Flammability:	Flammable; Not flammable in contact with air or water
Explosion Limits:	Flammability Limit Lower (%) 0.75% v/v Flammability Limit Upper (%) 7.4% v/v Explosive Limit Lower (%) – No information available Explosive Limit Upper (%) – No information available
Vapor Pressure:	132Pa (25°C)
Vapor Density (Air=1):	>1
Solubility:	0.056mg/L (23°C)
Partition Coefficient:	6.49 (25°C)
Auto-ignition Temperature:	723.2 – 728.6°F (384-387°C) (ASTM E-659)
Viscosity:	2.3 mm ² /s (25°C)
Decomposition Temperature:	No information available

Section 10. Stability and Reactivity

Chemical Stability:	Stable under normal conditions (temperature, pressure etc.)
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	None known
Incompatible Materials:	Strong oxidizing agents
Hazardous Decomposition Products:	Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

Section 11. Toxicological Information

Primary Routes of Entry:

Inhalation	Prolonged inhalation may be harmful. No adverse effects due to inhalation are expected at normal and foreseeable exposure level.
Ingestion:	Expected to be a low ingestion hazard.
Skin:	No adverse effects due to skin contact are expected.
Eyes:	Direct contact with eyes may casue temporary irritation.

Signs and Symptoms of Exposures:

Acute Toxicity:	Inhalation: LC50: Rat >36000 mg/m3 Oral: LD50: Rat >4800 mg/kg bw Dermal: LD50: Rat >2375 mg/kg bw
Chronic Toxicity:	Inhalation: NOAEC: Rat 150ppm (EPA OPPTS 870.4300)
Skin corrosion/irritation	Not irritating to rabbit skin. (equivalent or similar to OECD 404)
Serious Eye damage/eye irritation	Not irritating to eyes of rabbit. (equivalent or similar to OECD 405)
Respiratory or Skin Sensitization:	No information available; No evidence of skin sensitization
Mutagenicity:	No adverse effect observed (Negative) Bacterial reverse mutation assay: Negative (OECD 471)
Reproductive Toxicity	NOAEC: 300ppm. EPA OPPTS 870.3800 (Reproduction and Fertility Effects) equivalent or like OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in liver litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. NOAEL >= 500 ppm, No adverse effects to fetal development in rabbit, equivalent or like OECD 414 (Prenatal Development Toxicity Study) No information available
Specific target organ toxicity – single exposure	No information available
Specific target organ toxicity – repeated exposure	Repeated inhalation or oral exposure of mice and rats to octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed.

An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two-year combined chronic and carcinogenicity assay was conducted on octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs/day, 5days/week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas (benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing octamethylcyclotetrasiloxane would result in a significant risk to humans.

Carcinogenicity:

IARC:	No	NTP:	No	OSHA:	No
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Section 12. Ecological Information

Ecotoxicity (Aquatic and Terrestrial):	May cause long lasting harmful effects to aquatic life.
Bioaccumulative Potential	The substance does not biomagnify in food-webs. Tropic Magnification Factor (TMF) < 1 (field studies)
Mobility in Soil:	No information available
PBT and vPvB Assessment:	No information available
Other Adverse Effects:	No information available

Section 13. Disposal Considerations

Product:	Dispose of contents/container in accordance with local/regional/national/international regulations.
Disposing of Contaminated Packaging:	Treat as unused product as above.

Section 14. Transport Information

Land Transport (DOT):	Reclassified as a "combustible liquid" according to 49 CFR 173.120 (b)(2). Not regulated for ground shipments in the U.S. in non-bulk packaging (≤119 gallons).
UN Number:	Not applicable
UN Proper Shipping Name:	Not applicable
Transport Hazard Class:	Not applicable
Packing Group:	Not applicable
Sea Transport (IMDG):	
UN Number:	UN1993
UN Proper Shipping Name:	Flammable liquids, n.o.s. (Octamethylcyclotetrasiloxane)
Transport Hazard Class:	3
Packing Group:	III

Air Transport (IATA):

UN Number:	UN1993
UN Proper Shipping Name:	Flammable liquids, N.O.S. (Octamethylcyclotetrasiloxane)
Transport Hazard Class:	3
Packing Group:	III

Environmental Hazards (e.g., Marine pollutant): No

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code is not applicable.

Section 15. Regulatory Information
International Inventories:

TSCA (USA):	Listed
DSL (Canada):	Listed
ENCS (Japan)	Listed
EINECS (Europe):	Listed
IECSC (China):	Listed
KECL (Korea):	Listed
PICCS (Philippines):	Listed
AICS (Australia):	Listed
ERMA (New Zealand):	Listed

Federal Regulations:

SARA 313:	None
SARA 311/312:	No information available
Clean Water Act:	No information available
Clean Air Act, Section 112 HAPs (See 40CFR61):	No information available

State Regulations:

Massachusetts Right to Know Components:	None
New Jersey Right to Know Components:	None
Pennsylvania Right to Know Components:	None
California Proposition 65:	None

Section 16. Other Information

WHMIS Classification: No information available

HMIS Rating:

Health Hazard	1
Flammability:	2
Physical Hazard:	0
Personal Protection Equipment:	X

NFPA Rating

Health Hazard:	1
Fire Hazard:	2
Reactivity Hazard:	0

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