



MATERIAL SAFETY DATA SHEET

Revision Date: 04/22/2004

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: AEROSHELL® Turbine Oil 555

MSDS NUMBER: 857475E - 3

PRODUCT CODE(S): 60073

MANUFACTURER

SOPUS Products

P.O. Box 4453

Houston, TX. 77210-4453

TELEPHONE NUMBERS

Spill Information: (877) 242-7400

Health Information: (877) 504-9351

MSDS Assistance Number: (877) 276-7285

SECTION 2 PRODUCT/INGREDIENTS

INGREDIENTS

Aviation Turbine Oil

Synthetic ester blend with pentaerythritol

N-Phenyl-Naphthalenamine

Tricresyl phosphate (mixed isomers)

Proprietary additives

CAS#

Mixture

90-30-2

1330-78-5

Mixture

CONCENTRATION

90 - 99 %weight

1 - 3 %weight

1 - 3 %weight

< 1 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Light brown liquid. Mild odor.

Health Hazards: May be harmful if absorbed through the skin. May be harmful if swallowed.

Physical Hazards: No known physical hazards.

NFPA Rating (Health, Fire, Reactivity): 1, 1, 0

Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

Inhalation:

In applications where vapors (caused by high temperature) or mists (caused by mixing or spraying) are created, breathing may cause a mild burning sensation in the nose, throat and lungs.

Eye Irritation:

May be irritating to the eyes causing a burning sensation, redness, swelling and/or blurred vision.

Skin Contact:

Slightly toxic and may be harmful if absorbed through the skin. May be irritating to the skin causing a burning sensation, redness and/or swelling.

Ingestion:

May be harmful if swallowed.

Other Health Effects:

Refer to Section 11, Toxicological Information, for specific information on the following effects:

Reproductive Toxicity

For additional health information, refer to section 11.

FIRST AID MEASURES
SECTION 4

Inhalation:

Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin:

Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye:

Flush eyes with large amounts of water for at least 15 minutes. If redness, burning, blurred vision or swelling persist, transport to nearest medical facility for additional treatment.

Ingestion:

DO NOT induce vomiting. DO NOT take internally. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. If the victim is coughing, choking, has shortness of breath, or difficulty breathing, transport to the nearest medical facility for additional treatment. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F, shortness of breath, chest congestion or continued coughing or wheezing. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

FIRE FIGHTING MEASURES
SECTION 5

Flash Point [Method]: >490 °F/>254.44 °C [Cleveland Open Cup]

Extinguishing Media:

Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions:

Material will not burn unless preheated. Do not enter confined fire space without full bunker gear (helmet with face shield,

bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus.

SECTION 6

Protective Measures:

May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management:

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Reporting:

CERCLA: Product is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) petroleum exclusion. Releases to air, land, or water are not reportable under CERCLA (Superfund).

CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

SECTION 7

Precautionary Measures:

Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles such as shoes or belts that cannot be decontaminated. Do not take internally. Do not taste or swallow. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Storage:

Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

SECTION 8

Chemical	Limit	TWA	STEL	Ceiling	Notation
Tricresyl Phosphate	ACGIH TLV	0.1 mg/m3			
Tricresyl phosphate	OSHA PEL	0.01 mg/m3			

Exposure Controls

Adequate explosion-proof ventilation indoors and in laboratory settings to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles, or Safety glasses with side shields

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by:

Butyl, or Neoprene, or Polyethylene

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

For Mist: Air Purifying, R or P style NIOSH approved respirator.

For Vapors: Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator.

Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

PHYSICAL AND CHEMICAL PROPERTIES

SECTION 9

Appearance & Odor: Light brown liquid. Mild odor.

Substance Chemical Family: Lubricants

Flash Point	> 490 °F [Cleveland Open Cup]	Pour Point	-80 °F
Specific Gravity	1	Viscosity	25 cSt - 30 cSt @ 40 °C

REACTIVITY AND STABILITY**SECTION 10****Stability:**

Material is stable under normal conditions.

Conditions to Avoid:

Avoid heat and open flames.

Materials to Avoid:

Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products:

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Phosphorus Oxides and other unidentified organic compounds may be formed upon combustion.

TOXICOLOGICAL INFORMATION**SECTION 11****Acute Toxicity**

TEST	Result	OSHA Classification	Material Tested
Dermal LD50	>1 g/kg(Rabbit)	Non-Toxic	Based on components(s)
Oral LD50	1.25 g/kg(Rat)	Non-Toxic	Based on components(s)

Carcinogenicity Classification

Chemical Name	NTP	IARC	ACGIH	OSHA
Aviation Turbine Oil	No	No	No	No

Neurotoxicity	Multifocal spinal cord and sciatic nerve degeneration and reduced hindlimb grip strength occurred in mice orally exposed to tricresyl phosphate for periods ranging from two weeks to two years.
Reproductive Toxicity	Reduced fertility was observed in both generations of mice orally exposed to tricresyl phosphate in a 2-generation reproductive effects study. The percentage of motile sperm was also significantly reduced. In a second study of male and female rats orally exposed to TCP, males exhibited atrophy of the seminiferous tubules and aspermatogenesis. Ovarian cell hypertrophy was reported in females.
Sensitization	N-phenyl-1-naphthylamine was tested in guinea pigs using three different procedures. It was found to be a strong skin sensitizer in when tested by OECD guideline 406, and the Magnusson and Kligman maximumization test procedures. It was nonsensitizing when tested using the modified Landsteiner procedure. Contact dermatitis potentially associated with occupational exposure to greases or oils containing N-phenyl-1-naphthylamine and other chemicals has also been reported.
Systemic Toxicity	A number of organ changes were reported in rats and mice following repeated oral exposure to tricresyl

phosphate. Renal papillary necrosis, cytoplasmic vacuolization in the adrenal cortex pituitary gland hypertrophy were reported in rats. Fatty liver change and necrosis of the mandibular lymph node, thymus and spleen was reported in some exposed mice.

SECTION 12 **ECOLOGICAL INFORMATION**

Environmental Impact Summary:

There is no ecological data available for this product. However, this product is an oil. It is persistent and does not readily biodegrade. However, it does not bioaccumulate.

SECTION 13 **DISPOSAL CONSIDERATIONS**

RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.

SECTION 14 **TRANSPORT INFORMATION**

US Department of Transportation Classification

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Marine Pollutant Technical Name: Tricresyl Phosphate

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

International Air Transport Association

Not regulated under IATA rules.

International Maritime Organization Classification

Not regulated under International Maritime Organization rules.

SECTION 15 **REGULATORY INFORMATION**

Federal Regulatory Status

to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-1998). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

LABEL INFORMATION

SECTION 17

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 60073

AEROSHELL® Turbine Oil 555

CAUTION!

May be harmful if absorbed through the skin. MAY CAUSE SKIN AND EYE IRRITATION. MAYBE HARMFUL IF SWALLOWED. PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE OIL ACNE OR DERMATITIS.

Refer to Section 11, Toxicological Information, for specific information on the following effects:
Reproductive Toxicity

Precautionary Measures:

Avoid prolonged or repeated contact with eyes, skin and clothing. Avoid breathing of vapors, fumes, or mist. Do not take internally. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

FIRST AID

Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin Contact: Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye Contact: Flush eyes with large amounts of water for at least 15 minutes. If redness, burning, blurred vision or swelling persist, transport to nearest medical facility for additional treatment.

Ingestion: DO NOT induce vomiting. DO NOT take internally. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. If the victim is coughing, choking, has shortness of breath, or difficulty breathing, transport to the nearest medical facility for additional treatment. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F, shortness of breath, chest congestion or continued coughing or wheezing.

FIRE

In case of fire, Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water.

SPILL OR LEAK

Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Synthetic ester blend with pentaerythritol, Mixture; N-Phenyl-Naphthalenamine, 90-30-2; Tricresyl phosphate (mixed isomers), 1330-78-5; Proprietary additives, Mixture

NFPA Rating (Health, Fire, Reactivity): 1, 1, 0

TRANSPORTATION

US Department of Transportation Classification

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Marine Pollutant Technical Name: Tricresyl Phosphate

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

Name and Address

SOPUS Products
P.O. Box 4453
Houston, TX 77210-4453

ADMINISTRATIVE INFORMATION

MANUFACTURER ADDRESS: SOPUS Products, P.O. Box 4453, Houston, TX. 77210-4453
Company Product Stewardship & Regulatory Compliance Contact: Timothy W Childs
Phone Number: (713) 241-1524

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