RADCOLUBE® FR457

Safety Data Sheet

MIL-H-19457D(SH) Hydraulic Fluid, Fire-Resistant, Non-Neurotoxic

Issue date: 1/2/2012 Revision date: 8/8/2025 Supersedes: 4/9/2024 Version: 9.0

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Identification

Trade name	RADCOLUBE® FR457
Radco Product Code:	FR457 (03349-A)
Specification:	MIL-H-19457D(SH) Hydraulic Fluid, Fire-Resistant, Non-Neurotoxic
National Stock Number(s) (NSN):	9150-01-113-2045 (Oblong Gallon) 9150-01-113-2046 (5 Gallon Pail) 9150-01-113-2047 (55 Gallon Drum)

1.2. Recommended use and restrictions on use

Use of the substance/mixture:	Fire-resistant hydraulic fluid for hydraulic systems which are accumulator loaded and operate above 600 pounds per square inch (lb/in2) gauge.
Use of the substance/mixture:	Lubricant

1.3. Supplier

Manufacturer

Radco Industries L.L.C.
CAGE Code 6ZS16
700 Kingsland Drive
Batavia, Illinois 60510
United States
T (630) 232-7966
www.radcoind.com

1.4. Emergency telephone number

Emergency number:	For Chemical Emergency Call CHEMTREC 24hr/day 7days/week Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410	Very toxic to aquatic life with long lasting effects.

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US):

Signal word (GHS US): Warning

Hazard statements (GHS US): H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US): P273 - Avoid release to the environment.
P391 - Collect spillage.
P501 - Dispose of an approved waste disposal plant to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	CAS-No.	%	GHS US classification
2,3-di-tert-butylphenyl phenyl phosphate	65652-41-7	30 – 35	Flam. Liq. 2, H225 Aquatic Chronic 4, H413
4-tert-Butylphenyl diphenyl phosphate	56803-37-3	30 – 35	Flam. Liq. 4, H227 STOT RE 1, H372 Aquatic Chronic 1, H410
Triphenyl phosphate	115-86-6	≤ 25	Aquatic Chronic 1, H410
tris(4-tert-butylphenyl) phosphate	68937-40-6	10 – 15	Flam. Liq. 4, H227 STOT RE 1, H372 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general: If you feel unwell, seek medical advice.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Move the affected person away from the contaminated area and into the fresh air. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact: Wash contaminated clothing before reuse. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. Wash skin with plenty of water.

First-aid measures after eye contact:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse eyes with water as a precaution.
First-aid measures after ingestion:	Rinse mouth out with water. Immediately consult a doctor/medical service. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation:	None under normal conditions.
Symptoms/effects after skin contact:	None under normal conditions.
Symptoms/effects after eye contact:	None under normal conditions.
Symptoms/effects after ingestion:	None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Dry chemical, CO2, dry sand, or alcohol-resistant foam. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media:	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard:	Not easily combustible.
Explosion hazard:	No direct explosion hazard.
Hazardous decomposition products in case of fire:	On burning: release of toxic and corrosive gases/vapours (phosphorus oxides, carbon monoxide - carbon dioxide).

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions:	Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting:	Use self-contained breathing apparatus and chemically protective clothing. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures:	Clean up any spills as soon as possible, using an absorbent material to collect it. Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

6.1.1. For non-emergency personnel

Protective equipment:	Wear recommended personal protective equipment.
Emergency procedures:	Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment:	Do not attempt to take action without suitable protective equipment. Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures:	Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment. Harmful to aquatic life with long lasting effects.

6.3. Methods and material for containment and cleaning up

For containment:	Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up:	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. This material and its container must be disposed of in a safe way, and as per local legislation.
Other information:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed:	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling:	Ensure good ventilation of the work station. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep container tightly closed.
Handling temperature:	≤ 65 °C
Hygiene measures:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:	Keep in a cool, well-ventilated place away from heat.
Storage conditions:	Keep cool. Protect from sunlight.
Storage temperature:	≤ 65 (≤ 65) °C
Packaging materials:	Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

RADCOLUBE® FR457	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Triphenyl phosphate
ACGIH® TLV® TWA	3 mg/m³

Remark (ACGIH)	TLV® Basis: Cholinesterase inhib. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Triphenyl phosphate
OSHA PEL TWA	3 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)

No additional information available

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)

No additional information available

tris(4-tert-butylphenyl) phosphate (68937-40-6)

No additional information available

Triphenyl phosphate (115-86-6)

No additional information available

USA - ACGIH - Occupational Exposure Limits	
Local name	Triphenyl phosphate
ACGIH® TLV® TWA	3 mg/m³
Remark (ACGIH)	TLV® Basis: Cholinesterase inhib. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Triphenyl phosphate
OSHA PEL TWA	3 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.
Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Eye protection:

Chemical goggles or face shield. Safety glasses

Skin and body protection:
Long sleeved protective clothing

Respiratory protection:
In case of inadequate ventilation wear respiratory protection.

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Appearance:	Liquid.
Color:	Blue
Odor:	slight
Odor threshold:	No data available
pH:	No data available
Melting point:	Not applicable
Freezing point:	< -18 °C Pour point
Boiling point:	260 °C at 13.3 hPa
Flash point:	246 °C Closed cup
Relative evaporation rate (butyl acetate=1):	No data available
Flammability:	Not flammable Not self-igniting.
Vapor pressure:	1.08 mPa at 20°C (68°F)
Relative vapor density at 20°C:	No data available
Relative density:	No data available
Density:	1.17 g/ml at 20°C (68°F)
Solubility:	Water: < 0.1 g/100ml
Partition coefficient n-octanol/water (Log Pow):	4.85 at 25°C
Auto-ignition temperature:	No data available
Decomposition temperature:	> 234 °C

Viscosity, kinematic:	38.5 – 45.5 mm²/s at 40°C (104°F)
Viscosity, dynamic:	No data available
Explosion limits:	No data available
Explosive properties:	Not explosive.
Oxidizing properties:	Not classified.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing agent. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral):	Not classified
Acute toxicity (dermal):	Not classified
Acute toxicity (inhalation):	Not classified
Skin corrosion/irritation:	Not classified
Carcinogenicity:	Not classified
Aspiration hazard:	Not classified
Viscosity, kinematic:	38.5 – 45.5 mm²/s at 40°C (104°F)
Symptoms/effects after inhalation:	None under normal conditions.
Symptoms/effects after skin contact:	None under normal conditions.
Symptoms/effects after eye contact:	None under normal conditions.
Symptoms/effects after ingestion:	None under normal conditions.
STOT-single exposure:	Not classified
STOT-repeated exposure:	Not classified

Reproductive toxicity:	Not classified

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)	
LD50 oral rat:	2140 mg/kg Source: TOMSON;Loli;
LD50 dermal rabbit:	> 5000 mg/kg
ATE US (oral):	2140 mg/kg body weight

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
LD50 oral rat:	> 5000 mg/kg body weight (OECD 401 method)
LD50 dermal rabbit:	> 2000 mg/kg body weight (OECD 402 method)

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
LD50 oral rat:	> 5000 mg/kg body weight (OECD 401 method)
LD50 dermal rabbit:	> 2000 mg/kg body weight (OECD 402 method)

Triphenyl phosphate (115-86-6)	
LD50 oral rat:	> 20000 mg/kg body weight (OECD 401 method)
LD50 dermal rabbit:	> 10000 mg/kg body weight (OECD 402 method)

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)	
Serious eye damage/irritation:	Not classified

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
Serious eye damage/irritation:	Not classified

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
Serious eye damage/irritation:	Not classified

Triphenyl phosphate (115-86-6)	
Serious eye damage/irritation:	Not classified

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)	
Respiratory or skin sensitization:	Not classified

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
Respiratory or skin sensitization:	Not classified

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
Respiratory or skin sensitization:	Not classified

Triphenyl phosphate (115-86-6)	
Respiratory or skin sensitization:	Not classified

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)	
Germ cell mutagenicity:	Not classified

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
Germ cell mutagenicity:	Not classified

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
Germ cell mutagenicity:	Not classified

Triphenyl phosphate (115-86-6)	
Germ cell mutagenicity:	Not classified

RADCOLUBE® FR457	
IARC group:	Not classified
National Toxicity Program (NTP) Status:	Not classified

RADCOLUBE® FR457	
NOAEL (animal/male, F0/P):	107.5 mg/kg body weight 90 days, oral
NOAEL (animal/female, F0/P):	124.8 mg/kg body weight 90 days, oral

RADCOLUBE® FR457	
NOAEL (oral,rat,90 days):	107.5 – 124.8 mg/kg bodyweight/day

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
NOAEL (dermal,rat/rabbit,90 days):	10 mg/kg body weight (OECD 410 method)
STOT-repeated exposure:	Causes damage to organs through prolonged or repeated exposure.

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
NOAEL (dermal,rat/rabbit,90 days):	≈ 10 mg/kg body weight (OECD 410 method)
STOT-repeated exposure:	Causes damage to organs through prolonged or repeated exposure.

Triphenyl phosphate (115-86-6)	
NOAEL (dermal,rat/rabbit,90 days):	1000 mg/kg body weight (EPA OPPTS 870.3200)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Very toxic to aquatic life with long lasting effects.

RADCOLUBE® FR457	
LC50 - Fish [1]:	0.8 mg/l Ictalurus punctatus (Channel catfish)
EC50 - Crustacea [1]:	202 ng/l Daphnia magna (Water flea)

RADCOLUBE® FR457	
ErC50 algae:	3 mg/l
NOEC (chronic):	0.0399 mg/l Daphnia magna (Water flea)

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
LC50 - Fish [1]:	0.8 mg/l Ictalurus punctatus (Channel catfish)
EC50 - Crustacea [1]:	343 µg/l Daphnia magna (Water flea)
EC50 - Other aquatic organisms [1]:	1.9 mg/l Chironomus tentans

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
LC50 - Fish [1]:	0.8 mg/l Ictalurus punctatus (Channel catfish)
EC50 - Crustacea [1]:	202 µg/l Daphnia magna (Water flea)
EC50 - Crustacea [2]:	289 µg/l Daphnia magna (Water flea)
ErC50 algae:	3 mg/l Source: ECHA registration dossier

Triphenyl phosphate (115-86-6)	
LC50 - Fish [1]:	0.4 mg/l Oncorhynchus mykiss (Rainbow trout)
LC50 - Other aquatic organisms [1]:	0.18 mg/l Source: ECHA registration dossier
EC50 - Crustacea [1]:	2.41 mg/l Daphnia magna (Water flea)
LOEC (chronic):	0.931 mg/l Species: Daphnia magna (Water flea), 21 days
NOEC (chronic):	0.254 mg/l Daphnia magna (Water flea)

12.2. Persistence and degradability

Triphenyl phosphate (115-86-6)	
Persistence and degradability:	Biodegradable in the soil. Readily biodegradable in water.

12.3. Bioaccumulative potential

RADCOLUBE® FR457	
BCF - Fish [1]:	1850 mg/kg
Partition coefficient n-octanol/water (Log Kow):	4.85 at 25°C

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)	
Partition coefficient n-octanol/water (Log Pow):	8.52 Source: EPISUITE

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
Partition coefficient n-octanol/water (Log Pow):	5.12 Source: Hazardous Substances Data Bank

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
Partition coefficient n-octanol/water (Log Pow):	4.68

Triphenyl phosphate (115-86-6)	
BCF - Fish [1]:	144 mg/l (18 days, Species: Oryzias latipes, Flow-through system, Freshwater, Experimental data, Fresh weight)
BCF - Other aquatic organisms [1]:	43 mg/l (Species: Lemna sp., Literature data, Chronic
Partition coefficient n-octanol/water (Log Pow):	4.63 (OECD 107 method)
Bioaccumulative potential:	The substance has low potential for bioaccumulation.

12.4. Mobility in soil

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)	
Mobility in soil:	257900

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)	
Mobility in soil:	22650 Source: EPI Suite

tris(4-tert-butylphenyl) phosphate (68937-40-6)	
Mobility in soil:	2937000 Source: EPI Suite

Triphenyl phosphate (115-86-6)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc):	3.4 – 3.55 (calculated value)
Ecology - soil:	Potential for mobility in soil is slight.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation:	Disposal must be done according to official regulations.
Waste treatment methods:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations:	Disposal must be done according to official regulations.
Product/Packaging disposal recommendations:	Disposal must be done according to official regulations.
Additional information:	Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA / ICAO / ADN / RID / ADG

14.1. UN number

UN-No. (DOT):	UN3082
UN-No.:	UN3082
UN-No. (IMDG):	3082
UN-No. (IATA):	3082

14.2. UN proper shipping name

Proper Shipping Name (DOT):	Environmentally hazardous substances, liquid, n.o.s. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)
Proper Shipping Name (TDG):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)
Proper Shipping Name (IMDG):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)
Proper Shipping Name (IATA):	Environmentally hazardous substance, liquid, n.o.s. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)
Transport document description (DOT):	UN3082 Environmentally hazardous substances, liquid, n.o.s. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates), 9, III
Transport document description (TDG):	UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates), 9, III
Transport document description (IMDG):	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates), 9, III, MARINE POLLUTANT
Transport document description (IATA):	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates), 9, III

14.3. Transport hazard class(es)

DOT

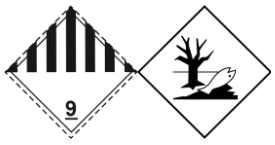
Transport hazard class(es) (DOT): 9

Hazard labels (DOT): 9

TDG

Transport hazard class(es) (TDG): 9

Hazard labels (TDG):: 9



IMDG

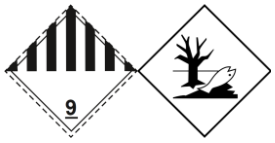
Transport hazard class(es) (IMDG): 9

Hazard labels (IMDG): 9

IATA

Transport hazard class(es) (IATA): 9

Hazard labels (IATA): 9



14.4. Packing group

Packing group (DOT):	III
Packing group (TDG):	III
Packing group (IMDG):	III
Packing group (IATA):	III

14.5. Environmental hazards

Dangerous for the environment: Yes

Marine pollutant: Yes

Other information: Non-bulk packages may ship as Non-Regulated under 49 CFR 173.150(f)(2).

14.6. Special precautions for user

DOT

UN-No. (DOT): UN3082

DOT Special Provisions (49 CFR 172.102):	8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description “Other regulated substances, liquid or solid, n.o.s.”, as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 173 - An appropriate generic entry may be used for this material. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as “Environmentally hazardous substances, solid, n.o.s,” UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx):	155
DOT Packaging Non Bulk (49 CFR 173.xxx):	203
DOT Packaging Bulk (49 CFR 173.xxx):	241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27):	No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75):	No limit
DOT Vessel Stowage Location:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.

TDG

UN-No.:	UN3082

TDG Special Provisions:	16 - 1) The technical name of the most dangerous substance related to the primary class must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(i)(A) of Part 3, Documentation. The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4, Dangerous Goods Safety Marks. 2) subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical: a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. An example in Canada is the “Food and Drugs Act”,99 - (1) Mixtures of solids that are not dangerous goods and liquids or solids that are UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, may be handled, offered for transport or transported as UN3077 if there is no visible liquid when the dangerous goods are loaded into a means containment and during transport. (2) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety. SOR/2014-306 UN3077, UN3082 SOR/2014-306
Explosive Limit and Limited Quantity Index:	5 L
Excepted quantities (TDG):	E1
Emergency Response Guide (ERG) Number:	171

IMDG

Special provision (IMDG):	274, 335, 969
Limited quantities (IMDG):	5 L
Excepted quantities (IMDG):	E1
Packing instructions (IMDG):	LP01, P001
Packing provisions (IMDG):	PP1
IBC packing instructions (IMDG):	IBC03
Tank instructions (IMDG):	T4
Tank special provisions (IMDG):	TP1, TP29
EmS-No. (Fire):	F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage):	S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG):	A

IATA

PCA Excepted quantities (IATA):	E1
PCA Limited quantities (IATA):	Y964
PCA limited quantity max net quantity (IATA)	30kgG
PCA packing instructions (IATA):	964
PCA max net quantity (IATA):	450L
CAO packing instructions (IATA):	964
CAO max net quantity (IATA):	450L
Special provision (IATA):	A97, A158, A197, A215
ERG code (IATA):	9L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

2,3-di-tert-butylphenyl phenyl phosphate (65652-41-7)

Listed on the Canadian DSL (Domestic Substances List)

4-tert-Butylphenyl diphenyl phosphate (56803-37-3)

Listed on the Canadian DSL (Domestic Substances List)

tris(4-tert-butylphenyl) phosphate (68937-40-6)

Listed on the Canadian DSL (Domestic Substances List)

Triphenyl phosphate (115-86-6)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Triphenyl phosphate (115-86-6)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

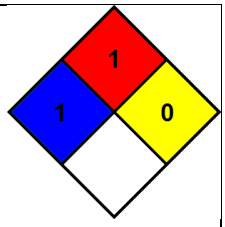
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)
Revision date: 08/08/2025

Full text of hazard classes and H-statements	
H225	Highly flammable liquid and vapor
H227	Combustible liquid
H372	Causes damage to organs through prolonged or repeated exposure
H410	Very toxic to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

NFPA health hazard	1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	1 - Materials that must be preheated before ignition can occur.
NFPA reactivity	0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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