

**Skydrol® PE-5**

Customer PO: 8895596

Version	Revision Date:	SDS Number:	Date of last issue: 07/02/2021
3.1	01/03/2023	150000093410	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0260	F53 / 0091395601 / 0001004552

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**SECTION 1. IDENTIFICATION**

Product name : Skydrol® PE-5

Product code : P3410304

**Manufacturer or supplier's details**Company name of supplier : Solutia Inc.  
A Subsidiary of Eastman Chemical CompanyAddress : 575 Maryville Centre Drive  
Saint Louis MO 63141

Telephone : (423) 229-2000

Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

**Recommended use of the chemical and restrictions on use**

Recommended use : Hydraulic fluids

Restrictions on use : The Environmental Protection Agency prohibits processing and distribution of this chemical/product for any use other than: (1) In hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements, (2) lubricants and greases, (3) new or replacement parts for motor and aerospace vehicles, (4) as an intermediate in the manufacture of cyanoacrylate glue, (5) in specialised engine air filters for locomotive and marine applications, and (6) in adhesives and sealants before January 6, 2025, after which use in adhesives and sealants is prohibited. In addition, all persons are prohibited from releasing PIP (3:1) to water during manufacturing, processing and distribution in commerce, and must follow all existing regulations and best practices to prevent the release of PIP (3:1) to water during the commercial use of PIP (3:1).

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Acute toxicity (Oral) : Category 4

Skin irritation : Category 2

Carcinogenicity : Category 2

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Reproductive toxicity (Oral) : Category 2

Specific target organ toxicity : Category 2 (Adrenal gland)  
- repeated exposure

**GHS label elements**

Hazard pictograms



Signal Word : Warning

Hazard Statements : H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H351 Suspected of causing cancer.  
H361 Suspected of damaging fertility or the unborn child if swallowed.  
H373 May cause damage to organs (Adrenal gland) through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Components**

Chemical name	CAS-No.	Concentration (% w/w)
Tributyl phosphate	126-73-8	58 - 68
Triisobutyl phosphate	126-71-6	8 - 10
Phenol, isopropylated, phosphate (3:1)	68937-41-7	5 - < 10
triphenylphosphate	115-86-6	1.3 - 1.9
7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester	62256-00-2	5.5 - 6.5
butylated hydroxytoluene	128-37-0	0.1 - 1

Eastman is committed to the safety, health and environment of our employees, our customers, and the communities we operate within. As part of this commitment, Eastman's Safety Data Sheets (SDS) are prepared in accordance with all applicable national and local regulations. The compositions of our documents reflect these requirements which include, but are not limited to, requirements under the Globally Harmonized System of Classification and Labeling (GHS). These compositions commonly involve the use of ranges versus specific analytical values. If you require a composition that is more specific, please refer to the Certificate of Analysis, sales specification, or contact your Customer Service Representative.

**SECTION 4. FIRST AID MEASURES**

If inhaled	:	Move to fresh air. Call a physician or poison control center immediately.
In case of skin contact	:	Wash off with soap and plenty of water. Wash contaminated clothing before re-use. Get medical attention. Thoroughly clean shoes before reuse.
In case of eye contact	:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed	:	Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed. Causes skin irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child if swallowed. May cause damage to organs through prolonged or repeated exposure.
Notes to physician	:	Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES**

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- Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Water spray
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Hazardous combustion products : Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
oxides of phosphorus
- Further information : None known.
- Special protective equipment for fire-fighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Wear appropriate personal protective equipment.  
Avoid breathing mist or vapors.  
Local authorities should be advised if significant spillages cannot be contained.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Clear up spills immediately and dispose of waste safely.  
Avoid release to the environment.
- Methods and materials for containment and cleaning up : Prevent runoff from entering drains, sewers, or streams.  
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : None known.
- Advice on safe handling : Avoid inhalation of vapor or mist.  
Do not get on skin or clothing.  
Avoid contact with skin, eyes and clothing.  
Do not swallow.  
Ensure adequate ventilation.  
Wash thoroughly after handling.
- Conditions for safe storage : Keep tightly closed.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Ingredients with workplace control parameters**

Components	CAS-No.	Value type	Control parame-	Basis
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		(Form of exposure)	ters / Permissible concentration	
Tributyl phosphate	126-73-8	TWA (Inhalable fraction and vapor)	5 mg/m <sup>3</sup>	ACGIH
		TWA	0.2 ppm 2.5 mg/m <sup>3</sup>	NIOSH REL
		TWA	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA	0.2 ppm 2.5 mg/m <sup>3</sup>	OSHA P0
triphenylphosphate	115-86-6	TWA	3 mg/m <sup>3</sup>	ACGIH
		TWA	3 mg/m <sup>3</sup>	NIOSH REL
		TWA	3 mg/m <sup>3</sup>	OSHA Z-1
		TWA	3 mg/m <sup>3</sup>	OSHA P0

**Engineering measures** : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal protective equipment**

**Respiratory protection** : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hand protection

**Remarks** : Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations.

**Eye protection** : Wear safety glasses with side shields (or goggles).

**Skin and body protection** : Wear suitable protective clothing.

**Protective measures** : Remove respiratory and skin/eye protection only after vapors have been cleared from the area. Ensure that eye flushing systems and safety showers are

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located close to the working place.  
Use personal protective equipment as required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : oily

Color : purple

Odor : odorless

Odor Threshold : not determined

pH : not determined

Melting point/range : < -80 °F / -62 °C

Boiling point/boiling range : not determined

Flash point : 340 °F / 171 °C  
Method: Cleveland open cup

Evaporation rate : not determined

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper flammability limit : not determined

Lower explosion limit / Lower flammability limit : not determined

Vapor pressure : 0.4 hPa (77 °F / 25 °C)

Relative vapor density : not determined

Relative density : 0.9956 (77 °F / 25 °C)

Density : 995 kg/m<sup>3</sup> (77 °F / 25 °C)

Autoignition temperature : 795 °F / 424 °C  
Method: ASTM D2155

Decomposition temperature : not determined

Viscosity

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Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	9.02 - 10.02 mm <sup>2</sup> /s (100 °F / 38 °C)
Explosive properties	:	Not classified
Oxidizing properties	:	Not classified

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable
Conditions to avoid	:	None known.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon dioxide (CO <sub>2</sub> ) Carbon monoxide

**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity	:	Remarks: Harmful if swallowed.
Acute inhalation toxicity	:	Remarks: No significant adverse effects were reported
Acute dermal toxicity	:	Remarks: No significant adverse effects were reported

**Components:****Tributyl phosphate:**

Acute oral toxicity	:	LD50 Oral (Rat, male and female): 1,553 mg/kg Assessment: Harmful if swallowed.  LD50 Oral (Rat, male and female): 1,400 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 4.242 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 Dermal (Rabbit, male and female): > 3,100 mg/kg Assessment: The substance or mixture has no acute dermal

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toxicity

**Triisobutyl phosphate:**

Acute inhalation toxicity : LC50 (Rat): > 5.14 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5,000 mg/kg  
 Assessment: The substance or mixture has no acute dermal toxicity

**Phenol, isopropylated, phosphate (3:1):**

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg  
 Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 200 mg/m<sup>3</sup>  
 Exposure time: 1 h  
 Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 Dermal (Rabbit): > 10,000 mg/kg  
 Assessment: The substance or mixture has no acute dermal toxicity

**triphenylphosphate:**

Acute oral toxicity : LD50 Oral (Rat, male): > 6,400 mg/kg

Acute dermal toxicity : LD50 Dermal (Guinea pig, male): > 5,000 mg/kg

**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**

Acute oral toxicity : LD50 Oral (Rat, male and female): 4,470 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit, male and female): > 7,940 mg/kg

**butylated hydroxytoluene:**

Acute oral toxicity : LD50 Oral (Rat): > 6,000 mg/kg

Acute dermal toxicity : LD50 Dermal (Guinea pig): > 20,000 mg/kg

**Skin corrosion/irritation**

Causes skin irritation.

**Product:**

Remarks : Causes skin irritation.



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**Components:****Tributyl phosphate:**

Species	:	Rabbit
Exposure time	:	4 h
Assessment	:	Causes skin irritation.
Result	:	irritating

**Triisobutyl phosphate:**

Species	:	Rabbit
Exposure time	:	4 h
Result	:	Mild skin irritation

**Phenol, isopropylated, phosphate (3:1):**

Species	:	Rabbit
Assessment	:	Not classified

**triphenylphosphate:**

Species	:	Guinea pig
Remarks	:	Non-irritating to the skin.

**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**

Species	:	Rabbit
Exposure time	:	24 h
Assessment	:	Not classified as hazardous.
Result	:	slight to moderate irritation

**butylated hydroxytoluene:**

Species	:	Rabbit
Exposure time	:	24 h
Result	:	very slight

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****Tributyl phosphate:**

Species	:	Rabbit
Result	:	slight irritation
Exposure time	:	24 h
Assessment	:	Not classified

**Triisobutyl phosphate:**

Species	:	Rabbit
Result	:	slight
Assessment	:	Not classified

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**Phenol, isopropylated, phosphate (3:1):**

Species	:	Rabbit
Result	:	none
Assessment	:	Not classified

**triphenylphosphate:**

Species	:	Rabbit
Result	:	slight

**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**

Species	:	Rabbit
Result	:	slight irritation
Exposure time	:	24 h
Assessment	:	Not classified

**butylated hydroxytoluene:**

Species	:	Rabbit
Result	:	none

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Product:**

Test Type	:	OECD 429: LLNA
Species	:	Mouse
Result	:	Not a skin sensitizer.

**Components:****Tributyl phosphate:**

Test Type	:	Skin Sensitization
Species	:	Guinea pig
Assessment	:	Not classified
Result	:	Does not cause skin sensitization.

Test Type	:	Skin Sensitization
Species	:	Humans
Assessment	:	Not classified
Result	:	Does not cause skin sensitization.

**Triisobutyl phosphate:**

Test Type	:	OECD 406: Guinea pig sensitization
Species	:	Guinea pig
Method	:	OECD 406: Guinea pig sensitization
Result	:	May cause sensitization by skin contact.

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**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**

Test Type : Skin Sensitization  
Species : Guinea pig  
Result : May cause sensitization by skin contact.

**butylated hydroxytoluene:**

Test Type : Skin sensitization  
Species : Guinea pig  
Result : non-sensitizing

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Tributyl phosphate:**

Genotoxicity in vitro : Test Type: Mutagenicity - Bacterial  
Metabolic activation: +/- activation  
Method: Bacterial Reverse Mutation Assay  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: +/- activation  
Method: In vitro Mammalian Chromosome Aberration Test  
Result: equivocal

Genotoxicity in vivo : Species: Rat (male and female)  
Application Route: oral: gavage  
Method: Mammalian Bone Marrow Chromosome Aberration Test  
Result: negative

**Triisobutyl phosphate:**

Genotoxicity in vitro : Test Type: Salmonella typhimurium assay (Ames test)  
Metabolic activation: +/- activation  
Method: Bacterial Reverse Mutation Assay  
Result: negative

Genotoxicity in vivo : Result: negative

**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**

Genotoxicity in vitro : Test Type: Salmonella typhimurium assay (Ames test)  
Metabolic activation: +/- activation  
Method: Bacterial Reverse Mutation Assay  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: +/- activation  
Method: In vitro Mammalian Chromosome Aberration Test  
Result: equivocal

Test Type: Mutagenicity - Mammalian

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Metabolic activation: +/- activation  
Method: In vitro Mammalian Cell Gene Mutation Test  
Result: negative

Genotoxicity in vivo : Species: Rat (male and female)  
Application Route: intraperitoneal injection  
Method: Mammalian Bone Marrow Chromosome Aberration Test  
Result: equivocal

**Carcinogenicity**

Suspected of causing cancer.

**Components:****Tributyl phosphate:**

Species : Rat, male and female  
Application Route : Ingestion  
Method : EPA OTS 798.3300  
Remarks : Limited evidence of a carcinogenic effect.  
May cause cancer.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child if swallowed.

**Components:****Phenol, isopropylated, phosphate (3:1):**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
General Toxicity Parent: NOAEL: 25 milligram per kilogram  
Remarks: Suspected of damaging fertility or the unborn child.

**triphenylphosphate:**

Reproductive toxicity - Assessment : Based on available data, the classification criteria are not met.

**STOT-single exposure**

Not classified based on available information.

**Components:****Tributyl phosphate:**

Assessment : Based on available data, the classification criteria are not met.

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**Triisobutyl phosphate:**

Assessment : Not classified

**Phenol, isopropylated, phosphate (3:1):**

Remarks : Not classified due to data which are conclusive although insufficient for classification.

**STOT-repeated exposure**

May cause damage to organs (Adrenal gland) through prolonged or repeated exposure.

**Components:****Tributyl phosphate:**

Assessment : Based on available data, the classification criteria are not met.

**Triisobutyl phosphate:**

Assessment : Not classified

**Phenol, isopropylated, phosphate (3:1):**

Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****Tributyl phosphate:**

Species : Mouse, male and female  
: 75 mg/kg  
Application Route : in feed  
Exposure time : 90 days

**Triisobutyl phosphate:**

Species : Rat, male  
: 68.4 mg/kg  
Application Route : Oral Study  
Exposure time : 90 days

**Aspiration toxicity**

Not classified based on available information.

**Product:**

No aspiration toxicity classification

**Components:****Triisobutyl phosphate:**

Not classified

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**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**

Not applicable

**Experience with human exposure****Product:**

Inhalation : Remarks: May cause damage to organs through prolonged or repeated exposure.

Skin contact : Remarks: Causes skin irritation.

Eye contact : Remarks: None known.

Ingestion : Remarks: Harmful if swallowed.

**Further information****Product:**

Remarks : None known.

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Tributyl phosphate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.8 mg/l  
aquatic invertebrates : Exposure time: 48 h

Toxicity to algae/aquatic : EC50 (Desmodesmus subspicatus (green algae)): 1.1 mg/l  
plants : Exposure time: 72 h

Toxicity to fish (Chronic tox- : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.82 mg/l  
icity) : Exposure time: 95 d

1.7 mg/l

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 1.3 mg/l  
aquatic invertebrates (Chron- : Exposure time: 21 d  
ic toxicity)

**Triisobutyl phosphate:**

Toxicity to fish : EC50 (Danio rerio (zebra fish)): > 12.6 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 24 mg/l

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aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 14.3 mg/l  
Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (algae)): 10.4 mg/l  
Exposure time: 72 h

**Phenol, isopropylated, phosphate (3:1):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.36 mg/l  
Exposure time: 96 h

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 1.3 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1 mg/l  
Exposure time: 48 h

LC50 (Mysidopsis bahia (opossum shrimp)): > 1 mg/l

Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 0.25 - 2.5 mg/l  
Exposure time: 72 h  
Test Type: Alga, Growth Inhibition Test

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

**triphenylphosphate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.4 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Americamysis): > 0.18 - < 0.32 mg/l  
Exposure time: 96 h

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (algae)): 0.25 mg/l  
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : EC10 (Oncorhynchus mykiss (rainbow trout)): 0.037 mg/l  
Exposure time: 30 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.254 mg/l  
Exposure time: 21 d

**butylated hydroxytoluene:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 0.57 mg/l  
Exposure time: 96 h

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.48 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): > 0.24 mg/l  
Exposure time: 72 h

NOEC (Pseudokirchneriella subcapitata (algae)): 0.24 mg/l  
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 0.053 mg/l  
Exposure time: 30 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.069 mg/l  
Exposure time: 21 d

**Persistence and degradability****Components:****Tributyl phosphate:**

Biodegradability : Result: Readily biodegradable.

**Triisobutyl phosphate:**Biodegradability : Result: Readily biodegradable.  
Biodegradation: 70 - 80 %  
Exposure time: 28 d  
Method: Ready Biodegradability: CO2 Evolution Test**Phenol, isopropylated, phosphate (3:1):**

Biodegradability : Remarks: Not readily biodegradable.

**triphenylphosphate:**

Biodegradability : Result: Readily biodegradable.

**7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 2-ethylhexyl ester:**Biodegradability : Concentration: 100 mg/l  
Method: Ready Biodegradability: Modified MITI Test (I)  
Remarks: Readily biodegradable**Bioaccumulative potential****Components:****Tributyl phosphate:**Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 20  
Exposure time: 56 d  
Method: OECD Test Guideline 305



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Bioconcentration factor (BCF): 35  
Exposure time: 38 d

Partition coefficient: n-octanol/water : Pow: 10,100

**Triisobutyl phosphate:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 3.72

**Phenol, isopropylated, phosphate (3:1):**

Bioaccumulation : Remarks: Potential bioaccumulation

**triphenylphosphate:**

Partition coefficient: n-octanol/water : log Pow: 4.63

**Mobility in soil****Components:****Phenol, isopropylated, phosphate (3:1):**

Distribution among environmental compartments : log Koc: 3.43 - 3.93

**Other adverse effects**

No data available

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : This product meets the criteria for a synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40 CFR 279). Those standards govern recycling and disposal in lieu of 40 CFR 260 -272 of the Federal hazardous waste program in states that have adopted these used oil regulations. Consult your attorney or appropriate regulatory official to be sure these standards have been adopted in your state. Recycle or burn in accordance with the applicable standards.  
Dispose of in accordance with local regulations.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA-DGR**

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UN/ID No. : UN 3082  
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (triphenyl phosphate)  
 Class : 9  
 Packing group : III  
 Labels : Miscellaneous  
 Packing instruction (cargo aircraft) : 964  
 Packing instruction (passenger aircraft) : 964  
 Remarks : Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

**IMDG-Code**

UN number : UN 3082  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate)  
 Class : 9  
 Packing group : III  
 Labels : 9  
 EmS Code : F-A, S-F  
 Marine pollutant : yes  
 Remarks : Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

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

Not applicable for product as supplied.

**Domestic regulation****49 CFR**

UN/ID/NA number : UN 3082  
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (triphenyl phosphate)  
 Class : 9  
 Packing group : III  
 Labels : CLASS 9  
 ERG Code : 171  
 Marine pollutant : yes(triphenyl phosphate)  
 Remarks : Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

**SECTION 15. REGULATORY INFORMATION****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

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**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Skin corrosion or irritation  
Carcinogenicity  
Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)  
Acute toxicity (any route of exposure)

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**The ingredients of this product are reported in the following inventories:**

DSL : All components of this product are on the Canadian DSL  
AIIIC : On the inventory, or in compliance with the inventory  
ENCS : On the inventory, or in compliance with the inventory  
IECSC : On the inventory, or in compliance with the inventory  
TCSI : On the inventory, or in compliance with the inventory  
TSCA : All substances listed as active on the TSCA inventory

**TSCA list**

The following substance(s) is/are subject to a Significant New Use Rule:  
Potassium decafluoro(pentafluoroethyl)cyclohexanesulphonate 67584-42-3

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:  
Phenol, isopropylated, phosphate (3:1) 68937-41-7

The following substance(s) is/are subject to TSCA - 6 Risk Management Rules List of Chemicals:  
Phenol, isopropylated, phosphate (3:1) 68937-41-7

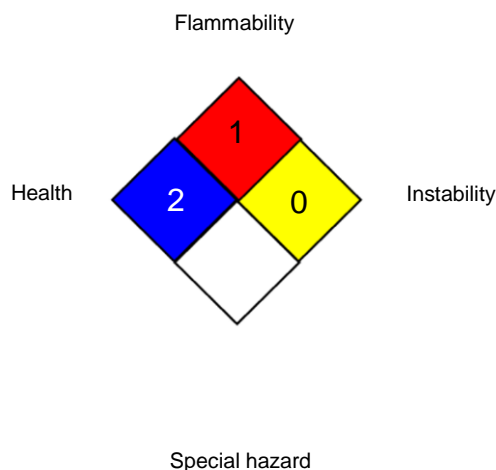
The Environmental Protection Agency prohibits processing and distribution of this chemical/product for any use other than: (1) In hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements, (2) lubricants and greases, (3) new or replacement parts for motor and aerospace vehicles, (4) as an intermediate in the manufacture of cyanoacrylate glue, (5) in specialised engine air filters for locomotive and marine applications, and (6) in adhesives and sealants before January 6, 2025, after which use in adhesives and sealants is prohibited. In addition, all persons are prohibited from releasing PIP (3:1) to water during manufacturing, processing and distribution in commerce, and must follow all

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existing regulations and best practices to prevent the release of PIP (3:1) to water during the commercial use of PIP (3:1).

**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

<b>HEALTH</b>	*	<b>2</b>
<b>FLAMMABILITY</b>		<b>1</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of other abbreviations**

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals

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in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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