



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

The recipient of this Safety Data Sheet is urged to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents and contractors of the information on this sheet, (2) furnish a copy to each of your customers for the product, and (3) request your customers to inform their employees and customers as well.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Reolube® Turbofluid 46B**

Synonyms: Tris(dimethylphenyl) phosphate, Trixylenyl phosphate, Trixylyl phosphate, Phosphoric acid trixylyl ester

Molecular formula: C₂₄H₂₇O₄P

Product Use Description: Fire resistant hydraulic fluid

Chemical nature: Phosphate

Company: Chemtura Corporation
199 Benson Road
Middlebury, CT
06749

General Information Telephone Number: (765) 497-6100

Emergency telephone: (800) 949-5167
CHEMTREC (US Transportation) :
(800) 424-9300
(703) 527-3887

For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Prepared by: Product Safety Department
(US) +1 866-430-2775
(EU) +44 (0) 1753.603.000
Email: MSDSRequest@chemtura.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

CAUTION!

Form: liquid
Colour: colourless
Odour: slight

May cause eye irritation.
May cause irritation of the mucous membranes.
May cause irritation of respiratory tract.
Mist generated by heat, violent agitation or spraying will

OSHA Hazards:
THIS MATERIAL IS HAZARDOUS UNDER THE
CRITERIA OF THE FEDERAL OSHA HAZARD
COMMUNICATION STANDARD 29CFR 1910.1200.



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

irritate skin, eyes, nose, throat and respiratory system.

Potential Health Effects

Primary Routes of Entry	:	Inhalation Ingestion Skin contact
Aggravated Medical Condition	:	None reported.
Inhalation	:	May cause irritation of the mucous membranes. May cause respiratory tract irritation.
Skin	:	May cause mild irritation of the skin.
Eyes	:	May cause eye irritation.
Ingestion	:	Not expected to be a hazard in normal industrial use.
Chronic Exposure	:	Long term exposure may cause effects in the following: neurotoxic effects Reproductive effects largely based on animal evidence
Symptoms of Overexposure	:	Reddening of skin and eyes Skin irritation Eye irritation Irritation of mucous membranes Respiratory irritation Signs and symptoms of neurotoxicity may include weakness, tremors, staggered walk or paralysis.

SECTION 3.COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Component	CAS-No.	Concentration
trixyl phosphate	25155-23-1	>= 99.5 %

SECTION 4. FIRST AID MEASURES

First aid procedures

Inhalation	:	Remove to fresh air. Get medical attention.
Skin contact	:	Remove/Take off immediately all contaminated clothing.



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

Wash skin thoroughly with soap and water for at least 15 minutes.
If skin irritation occurs, get medical advice/attention.

Eye contact : Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.
Get medical attention.

Ingestion : If conscious, make the victim drink the following:
Drink 1 or 2 glasses of water.
Get medical attention immediately.

Notes to physician

Symptoms : Reddening of skin and eyes
Skin irritation
Eye irritation
Irritation of mucous membranes
Respiratory irritation
Signs and symptoms of neurotoxicity may include weakness, tremors,
staggered walk or paralysis.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point : 505 °F (263 °C)
Method: Cleveland open cup ASTM D 92

390 °F (199 °C)
Method: closed cup

Protective equipment and precautions for firefighters

Suitable extinguishing media : All conventional media are suitable.

Hazardous combustion products : Oxides of phosphorus
Carbon dioxide (CO₂)
Carbon monoxide

Thermal decomposition may produce: Oxides of phosphorus
Carbon dioxide (CO₂)
Carbon monoxide

Possible decomposition products in case of hydrolysis are: Phenol.

Further information : In the event of fire, wear self-contained breathing apparatus.
Wear personal protective equipment.

Specific hazards during fire fighting : Burning produces obnoxious and toxic fumes.
Thermal decomposition can lead to release of irritating gases and vapours.
Slightly combustible
There are no unusual fire and explosion hazards known.

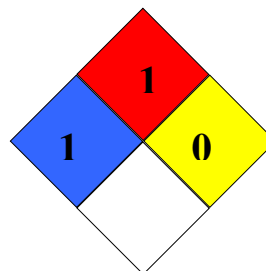


Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

Further information

NFPA Classification : Health Hazard: 1
Fire Hazard: 1
Reactivity Hazard: 0



SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : For personal protection see section 8.
- Environmental precautions : Avoid release to the environment.
- Additional advice : Wearing appropriate personal protective equipment, collect spill with the aid of an inert absorbent and place in suitable labeled containers for disposal.
- Use personal protective equipment.
Soak up with inert absorbent material.
Sweep up and shovel into suitable containers for disposal.
Keep in properly labelled containers.

SECTION 7. HANDLING AND STORAGE

Handling

- Advice on safe handling : Keep away from fire, sparks and heated surfaces.
Use personal protective equipment as required.
Avoid contact with skin, eyes and clothing.
Do not breathe vapours or spray mist.
Avoid repeated exposure.
Avoid prolonged contact.
Avoid the generation of aerosols from spraying, pouring or vigorous agitation whenever possible, particularly if product is heated.
If generation of airborne materials cannot be avoided, exhaust ventilation and/or personal protective equipment as described in section 8 should be used.

Storage

- Requirements for storage areas and containers : Keep in a dry, cool and well-ventilated place.
Isolate from incompatible materials.
Keep container tightly closed.
Protect containers against damage.

- Other data : Stable under normal conditions.



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

- Engineering measures : Use local ventilation to keep levels below established threshold values.
Avoid formation of dust and aerosols.
Use adequate ventilation and/or engineering controls in high temperature processing to prevent exposure to vapors.
In case of inadequate ventilation wear respiratory protection.
Adequate general ventilation is recommended when handling to control airborne levels.
Use mechanical ventilation for general area control.

Personal protective equipment

- Eye protection : Safety goggles
- Hand protection : Gloves
Butyl rubber
Nitrile rubber
- Skin and body protection : For personal hygiene purposes, use adequate clothing to prevent skin contact.
- Respiratory protection : Wear a NIOSH/MSHA approved organic cartridge respirator if misting or vapor occurs, or there is potential for airborne exposures to exceed established threshold values.
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Wear a NIOSH/MSHA approved self-contained breathing apparatus in emergency situations.
- Hygiene measures : Wash thoroughly after handling.
Wash contaminated clothing before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

- Form : liquid
- Colour : colourless
- Odour : slight

Safety data

- Flash point : 505 °F (263 °C)
Method: Cleveland open cup ASTM D 92



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

	390 °F (199 °C) Method: closed cup
Ignition temperature	: 1,067 °F (575 °C) Remarks: Auto-flammability
Molecular Weight	: 368.37
Pour point	: -4 °F (-20 °C)
Boiling point/boiling range	: > 572 °F (300 °C) at 1,013.25 hPa (1,013.25 hPa)
Vapour pressure	: 0.440 hPa (0.440 hPa) at 392 °F (200 °C)
Relative density	: 1.130 - 1.153 at 68 °F(20 °C)
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: log Pow: 5.63
Viscosity, dynamic	: 100 mPa.s at 77 °F (25 °C)
Viscosity, kinematic	: 43.3 mm ² /s at 104 °F (40 °C)

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: Moisture causes slow hydrolysis without exotherm.
Materials to avoid	: Strong oxidizing agents Strong acids Strong bases
Hazardous decomposition products	: <u>Type: Hazardous combustion products</u> Oxides of phosphorus Carbon dioxide (CO ₂) Carbon monoxide <u>Type: Thermal decomposition may produce:</u> Oxides of phosphorus Carbon dioxide (CO ₂) Carbon monoxide <u>Type: Possible decomposition products in case of hydrolysis are:</u> Phenol.



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

Thermal decomposition : >300 °C (572 °F)

Hazardous reactions : polymerization
Will not occur.

Note : Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 rat
Dose: 14,750 mg/kg

Acute dermal toxicity : LD50 rabbit
Dose: > 20,000 mg/kg

Acute inhalation toxicity : LC50 rat
Dose: > 5.28 mg/l
May cause irritation of the mucous membranes.
May cause respiratory tract irritation.

Skin irritation : rabbit
Result: Mild skin irritation

Eye irritation : rabbit
Result: Mild eye irritation

Genotoxicity in vitro : Ames test
negative

Further information
(Product) : Breathing or swallowing large quantities or repeated exposure over a prolonged period of time may cause neurological disturbances which may progress to delayed neurotoxicity characterized by ataxia and tremors. At 11.4 g/kg dose in hens, 85% inhibition of plasma cholinesterase and 94% inhibition of brain neurotoxic esterase was produced. At this dose hens showed motor incoordination starting on the tenth day and increased in severity over time. At a dose of 1.14 g/kg, no significant inhibition of brain neurotoxic esterase was produced.
A significant reduction in the number of pregnancies were seen in rats mated after oral administration for several weeks at doses of 200 or 1000 mg/kg/day. Reproduction was not adversely affected at 25 mg/kg/day. Microscopic examination of the reproductive organs found treatment related effects at all dose levels. A recovery group treated with trixylenyl phosphate and mated four weeks later had 100% successful pregnancies, confirming that the observed reproductive toxicity was fully reversible after exposure ceased.
In a 28-day feeding study at 0.1%, 0.5% and 1% doses, a NOEL was established at 0.1%. Epidemiology studies completed in 1977 and 1985 of current and former workers at a production facility where natural and synthetic triaryl phosphate esters are manufactured have not demonstrated any unusual pattern of mortality or disease.

NTP
(Product) : US. National Toxicology Program (NTP) Report on Carcinogens
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC
(Product) : US. IARC Monographs on Occupational Exposures to Chemical Agents
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHASp
(Product) : US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
No component of this product present at levels greater than or equal to 0.1% is identified



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

as a carcinogen or potential carcinogen by OSHA.

ACGIH
(Product)

US. ACGIH Threshold Limit Values

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 12. ECOLOGICAL INFORMATION

Biodegradability	:	Exposure time:	175 d
		25 %	
Acute Fish toxicity	:	LC50	
		Species:	Pimephales promelas (fathead minnow)
		Concentration:	1.11 mg/l
		Exposure time:	96 h
		LC50	
		Species:	Pimephales promelas (fathead minnow)
		Concentration:	100.00 mg/l
		Exposure time:	96 h
		LC50	
		Species:	Oncorhynchus mykiss (rainbow trout)
		Concentration:	100.00 mg/l
		Exposure time:	96 h
Toxicity to daphnia and other aquatic invertebrates.	:	LC50	
		Species:	Daphnia magna (Water flea)
		Concentration:	0.06 mg/l
		Exposure time:	48 h
		LC50	
		Species:	Daphnia magna (Water flea)
		Concentration:	3.86 mg/l
		Exposure time:	48 h
Toxicity to algae	:	EC50	
		Species:	Freshwater algae
		Dose:	> 1.01 mg/l
		Exposure time:	96 h
Additional ecological information	:	Avoid release to the environment.	

SECTION 13. DISPOSAL CONSIDERATIONS

Further information	:	Dispose of waste material in compliance with all federal, state, and local regulations. Dispose of wastes in an approved waste disposal facility. If this product was supplied in a single use container, care should be taken to dispose of the container in a responsible manner and in accordance with applicable regulations. Label precautions should be followed for any residual material in the container.
---------------------	---	---



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

SECTION 14. TRANSPORT INFORMATION

DOT UN-Number : 3082
Proper shipping name : Environmentally hazardous substances, liquid, n.o.s.
Proper technical name : (trixylyl phosphate)
Class : 9
Packing group : III

IATA UN-Number : 3082
Proper shipping name : Environmentally hazardous substance, liquid n.o.s.
Proper technical name : (trixylyl phosphate)
Class : 9
Packing group : III

IMDG UN-Number : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S.
Proper technical name : (trixylyl phosphate)
Class : 9
Packing group : III



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

SECTION 15. REGULATORY INFORMATION

National regulatory information

OSHA Hazards : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SARA Hazard category : Acute Health Hazard
Chronic Health Hazard

US CERCLA (Component) : US. Environmental Protection Agency (EPA); The 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Reportable quantity: 1,000 lbs		
xyleneol	1300-71-6	< 0.1 %

US State Regulations

US MA RTK (Component) : US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law, The Massachusetts Substance List, 105 CMR 670.000

Massachusetts hazardous substance

xyleneol	1300-71-6	< 0.1 %
----------	-----------	---------

Massachusetts hazardous substance

benzotriazole	95-14-7	0.005 %
---------------	---------	---------

US NJ RTK (Component) : US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

hazardous substance

xyleneol	1300-71-6	< 0.1 %
----------	-----------	---------

US PA RTK (Component) : US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

environmental hazard, hazardous substance		
xylenol	1300-71-6	< 0.1 %

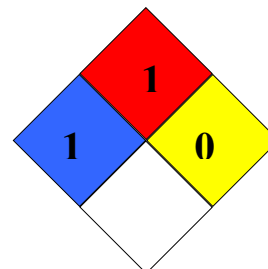
The components of this product are reported in the following inventories:

- TSCA Listed
- DSL Listed
- EINECS Listed
- AICS Listed
- ENCS Listed
- KECI Listed
- PICCS Listed
- IECSC Listed

SECTION 16. OTHER INFORMATION

Further information

NFPA Classification : Health Hazard: 1
 Fire Hazard: 1
 Reactivity Hazard: 0



HMIS Classification : Health Hazard: 1
 Chronic Health Hazard: *
 Flammability: 1
 Reactivity: 0
 PPI: Ask supervisor or safety specialist for handling instructions

Other Emergency Phone Number

<u>Latin America:</u>	Brazil	+52 113 711 91 44
	All other countries	+44 (0)208 762 8322
<u>Mexico:</u>		+52 555 004 87 63



Reolube® Turbofluid 46B

Version:	1.1
Revision Date:	01/15/2009
Print Date:	06/16/2009

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. Since the use of this information and of these opinions and the conditions of use of this product are not within the control of the seller, it is the user's obligation to determine the conditions of safe use of the products.