



# Material Safety Data Sheet

## Reofos® 65

Version: 1.5

Revision Date: 02/06/2013

Print Date: 08/22/2013

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: *Reofos® 65*

Product Use Description: Flame retardants  
Additive

Chemical nature: UVCB substance

Company: Chemtura Corporation  
199 Benson Road  
Middlebury, CT  
06749  
United States of America  
  
Telephone: (US) +1 866-430-2775

Emergency telephone number: CHEMTREC: (24 hours) 800-424-9300  
:  
Chemtura Corporation Emergency Response: CHEMTURA : 800-292-5898  
  
For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Prepared by: Product Safety Department  
(US) +1 866-430-2775  
  
02/06/2013  
  
MSDSRequest@chemtura.com

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### CAUTION!

Form: liquid      Colour: colourless      Odour: odourless

Hazard Summary : May cause eye, skin, and respiratory tract irritation.  
Toxic to aquatic organisms.  
May cause long-term adverse effects in the aquatic environment.

#### Potential Health Effects

Primary Routes of Entry : Inhalation  
Skin contact  
  
Skin : May irritate skin.  
  
Eyes : May irritate eyes.



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Ingestion :  
Chronic Exposure : Prolonged exposure can be harmful for certain organs, e.g. liver, kidneys, blood, nervous system and skin.  
  
Symptoms of Overexposure : toxic effects for reproduction

### Environmental Effects

Environmental Effects : Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Hazardous components

Component / CAS-No.	Weight percent
Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%] 68937-41-7	60 - 80 %
triphenyl phosphate 115-86-6	10 - 30 %

## SECTION 4. FIRST AID MEASURES

### First aid procedures

Inhalation : Move to fresh air.  
Obtain medical attention.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Wash off with soap and water.  
If symptoms persist, call a physician.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids.  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

### Notes to physician

Symptoms : toxic effects for reproduction

Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.



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### SECTION 5. FIREFIGHTING MEASURES

#### Flammable properties

Flash point :  $\geq 356^{\circ}\text{F}$  ( $\geq 180^{\circ}\text{C}$ )  
Method: ASTM D 93

Lower explosion limit : Remarks: no data available

Upper explosion limit : Remarks: no data available

#### Fire fighting

Suitable extinguishing media : Any

#### Protective equipment and precautions for firefighters

Specific hazards during firefighting : Burning produces irritant fumes.  
Exposure to decomposition products may be a hazard to health.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate personnel to safe areas.  
Use personal protective equipment.

Environmental precautions : Discharge into the environment must be avoided.  
Do not contaminate water.  
Do not flush into surface water or sanitary sewer system.

Methods for containment / Methods for cleaning up : Ventilate the area.  
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

#### Handling

Handling procedures : Handle in accordance with good industrial hygiene and safety practice.  
Wear personal protective equipment.  
Avoid contact with skin, eyes and clothing.  
Do not breathe vapours or spray mist.

#### Storage

Requirements for storage areas and containers : Keep in a dry, cool and well-ventilated place.  
Keep container tightly closed.  
Protect from contamination.



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Other data : Stable under recommended storage conditions.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Guidelines

##### Components with workplace control parameters

Components / CAS-No.	Value / Basis / Update	Control parameters	Further information
triphenyl phosphate 115-86-6	TWA  ACGIH  2007-01-01	3 mg/m3	
	TWA  OSHA P1  1997-08-04	3 mg/m3	
	TWA  OSHA P0  1989-01-19	3 mg/m3	

#### Engineering measures

Engineering measures : Use only with adequate ventilation.  
Ensure that extracted air cannot be returned to the workplace through the ventilation system.  
Ensure that eyewash stations and safety showers are close to the workstation location.

#### Personal protective equipment

Eye protection : Safety glasses with side-shields  
Wear face-shield and protective suit for abnormal processing problems.

Hand protection : Solvent-resistant gloves (butyl-rubber)

Skin and body protection : To protect against splashes from pouring:  
Chemical resistant apron  
impervious clothing  
Rubber or plastic boots

Respiratory protection : When using this product at elevated temperatures, wear a respirator with a vapour filter (see section 8).



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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

Form : liquid  
Colour : colourless  
Odour : odourless

#### Safety data

Flash point :  $\geq 356$  °F ( $\geq 180$  °C)  
Method: ASTM D 93  
Lower explosion limit : Note: no data available  
Upper explosion limit : Note: no data available  
Pour point :  $< -11$  °F ( $-24$  °C)  
Boiling point/boiling range :  $428 - 509$  °F ( $220 - 265$  °C)  
at 5.333 hPa (533.300 mmHg)  
Vapour pressure : 0.01333 hPa at 302 °F (150 °C)  
Specific Gravity : 1.153 - 1.183 at 20 °C  
Water solubility : Note: insoluble  
Viscosity, dynamic : 27 - 32 mPa.s  
Method: ASTM D 445

### SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Remarks: not applicable  
Materials to avoid : Remarks: None.  
Hazardous decomposition products : Note: Carbon oxides  
Oxides of phosphorus  
Hazardous reactions : Hazardous polymerisation does not occur.

### SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity  
Phenol, isopropylated,  
phosphate (3:1) [Triphenyl  
phosphate  $> 5\%$ ]  
triphenyl phosphate : LD50:  $> 5,000$  mg/kg  
Species: rat  
: LD50:  $> 2,000$  mg/kg  
Species: rat



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### Acute inhalation toxicity

Phenol, isopropylated,  
phosphate (3:1) [Triphenyl  
phosphate > 5%]  
triphenyl phosphate : LC50: > 200 mg/l  
Species: rat  
: LC50: > 200 mg/l  
Exposure time: 1 h  
Species: rat

### Acute dermal toxicity

Phenol, isopropylated,  
phosphate (3:1) [Triphenyl  
phosphate > 5%]  
triphenyl phosphate : LD50: > 10,000 mg/kg  
Species: rabbit  
: LD50: > 7,900 mg/kg  
Species: rabbit

### Skin irritation

: Species: rabbit  
Result: No skin irritation

### Eye irritation

: Species: rabbit  
Result: No eye irritation

### Sensitisation

: Remarks: Not classified due to lack of data.

### Aspiration toxicity

: No aspiration toxicity classification

## Toxicology Assessment

### CMR effects

: Carcinogenicity:  
Not classified due to lack of data.  
Mutagenicity:  
Not classified due to data which are conclusive although insufficient for  
classification.  
Reproductive toxicity:  
Suspected of damaging fertility. Suspected of damaging the unborn  
child.

### Further information

: Information given is based on data on the components and the  
toxicology of similar products.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity effects

#### Toxicity to fish

:  
Remarks:  
Information refers to the main component.



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Toxicity to daphnia and other aquatic invertebrates : Remarks:  
Information refers to the main component.

Toxicity to algae triphenyl phosphate : NOEC: 0.25 - 2.5 mg/l  
Exposure time: 72 h  
Species: Green algae (*Scenedesmus subspicatus*)  
Growth inhibition Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) triphenyl phosphate : NOEC: 0.037 mg/l  
Exposure time: 30 d  
Species: *Oncorhynchus mykiss* (rainbow trout)

### Elimination information (persistence and degradability)

Bioaccumulation : Remarks:  
no data available

Mobility : Remarks:  
no data available

Biodegradability : Result: Not readily biodegradable.

### Further information on ecology

#### Ecotoxicology Assessment

##### Results of PBT assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

Additional ecological information : Information given is based on data on the components and the ecotoxicology of similar products.

## SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Dispose of as hazardous waste in compliance with local and national regulations.  
Dispose of wastes in an approved waste disposal facility.

## SECTION 14. TRANSPORT INFORMATION

### DOT

UN number : 3082  
Description of the goods : Environmentally hazardous substances, liquid, n.o.s.  
(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])  
Class : 9  
Packing group : III



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ERG Code : 171

### IATA

UN number : 3082  
Description of the goods : Environmentally hazardous substance, liquid, n.o.s.  
(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])  
Class : 9  
Packing group : III  
Labels : 9  
Environmentally hazardous : yes

### IMDG

UN number : 3082  
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])  
Class : 9  
Packing group : III  
EmS Number 1 : F-A  
EmS Number 2 : S-F  
Marine pollutant : yes  
Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%]  
Environmentally hazardous : yes  
Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%]

## SECTION 15. REGULATORY INFORMATION

CERCLA Reportable :  
Quantity  
SARA 302 Reportable :  
Quantity  
SARA 311/312 Hazards : Acute Health Hazard  
Chronic Health Hazard

### EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

SARA 302 Reportable :  
Quantity  
phenol (Solution) 108-95-2 10000 lbs  
phenol (Solution) 108-95-2 500 lbs  
phenol (Solution) 108-95-2 500 lbs  
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SARA 304 Components :



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#### Massachusetts Right To Know Components

: triphenyl phosphate 115-86-6 OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z. ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances NFPA 325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m).  
Phenol 108-95-2 OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z. ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances NFPA 49 national fire protection association 'hazardous chemicals data' substances (NFPA 49). NFPA 325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m). EPA extremely hazardous substances. 29 cfr parts 300 and 355. Federal register 52 fr 13397 (4/22/87). Amended in 52 fr 48073 (12/17/87) and 53 fr 5547 (2/25/88). These substances are subject to the superfund amendment and reauthorization act (SARA) title III. CERCLA hazardous substances. 40 cfr part 302. May be subject to emergency release notification under SARA Title III. Toxic chemical release substances. 52 fr 21152 (6/4/87). Subject to SARA Title III.

#### Pennsylvania Right To Know Components

: Phenol, isopropylated, phosphate (3:1) 68937-41-7  
triphenyl phosphate 115-86-6 OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z.  
ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances  
NFPA 325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m).



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ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances  
NFPA49 national fire protection association 'hazardous chemicals data' substances (NFPA 49).  
NFPA325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m).  
EPA extremely hazardous substances. 29 cfr parts 300 and 355. Federal register 52 fr 13397 (4/22/87). Amended in 52 fr 48073 (12/17/87) and 53 fr 5547 (2/25/88). These substances are subject to the superfund amendment and reauthorization act (SARA) title III.  
CERCLA hazardous substances. 40 cfr part 302. May be subject to emergency release notification under SARA Title III.  
Toxic chemical release substances. 52 fr 21152 (6/4/87).  
Subject to SARA Title III.

### New Jersey Right To Know Components

: Phenol, isopropylated, phosphate (3:1) 68937-41-7  
triphenyl phosphate 115-86-6 OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z.  
ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances  
NFPA325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m).

### California Prop. 65 Components

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

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

#### US.TSCA

On TSCA Inventory

#### DSL

All components of this product are on the Canadian DSL list.

#### AICS

On the inventory, or in compliance with the inventory

#### NZIoC

On the inventory, or in compliance with the inventory

#### ENCS

On the inventory, or in compliance with the inventory

#### KECI

On the inventory, or in compliance with the inventory

#### PICCS

On the inventory, or in compliance with the inventory

#### IECSC

On the inventory, or in compliance with the inventory



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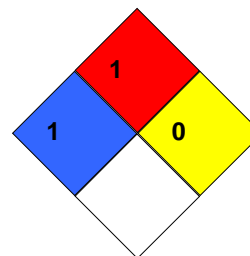
Print Date: 08/22/2013

### SECTION 16. OTHER INFORMATION

#### Further information

**HMIS Classification** : Health hazard: 1  
Chronic Health Hazard: \*  
Flammability: 1  
Reactivity: 0

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



#### Other Emergency Phone Number

<u>Latin America:</u>	Brazil	+55 113 711 9144
	All other countries	+44 (0) 1235 239 670
<u>Mexico:</u>		+52 555 004 8763

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.