



# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Version: 2.0

DLM-77

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Mixtures  
Product name : 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D  
Product code : DLM-77  
Other means of identification : Also applicable to:  
DLM-77C  
DLM-77D

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302  
Skin Irrit. 2 H315  
Eye Irrit. 2 H319  
Carc. 2 H351  
STOT RE 2 H373

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

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.3; R40  
Xn; R22  
R52/53

Full text of R-phrases: see section 16

#### GHS-US classification

Acute Tox. 4 (Oral) H302  
Skin Irrit. 2 H315  
Eye Irrit. 2A H319  
Carc. 2 H351  
STOT RE 2 H373

Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

Central nervous system, Blood, Liver, Cardiovascular system, Kidney.

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 2.2. Label elements

#### Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Warning

Hazardous ingredients :

CHLOROFORM-D (D, 99.8%)

Hazard statements (CLP) :

H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H351 - Suspected of causing cancer (in contact with skin, if inhaled, if swallowed)  
H373 - May cause damage to organs (central nervous system, blood, liver, cardiovascular system, kidneys) through prolonged or repeated exposure (in contact with skin, if inhaled, if swallowed)

Precautionary statements (CLP) :

P260 - Do not breathe dust, fume, gas, mist, spray, vapors.  
P264 - Wash Both hands thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P273 - Avoid release to the environment.  
P280 - Wear protective clothing, protective gloves.  
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.  
P302+P352 - IF ON SKIN: Wash with plenty of water.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H351 - Suspected of causing cancer (Inhalation, Dermal, oral)  
H373 - May cause damage to organs (central nervous system, blood, liver, cardiovascular system, kidneys) through prolonged or repeated exposure (Dermal, Inhalation, oral)

Precautionary statements (GHS-US) :

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, spray, vapors.  
P264 - Wash Both hands thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P280 - Wear protective clothing, protective gloves.  
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell  
P302+P352 - If on skin: Wash with plenty of water  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P314 - Get medical advice/attention if you feel unwell.  
P321 - Specific treatment (see First aid measures on this label)  
P330 - Rinse mouth.  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P362 - Take off contaminated clothing and wash before reuse.  
P405 - Store locked up.  
P501 - Dispose of contents/container to Comply with applicable regulations

### 2.3. Other hazards

No additional information available

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	Classification according to Directive 67/548/EEC
CHLOROFORM-D (D, 99.8%)	(CAS-No.) 865-49-6 (EC-No.) 212-742-4 (EC Index-No.) 602-006-00-4 (Unlabeled)	98.96	Carc.Cat.3; R40 T; R23 Xi; R36/38 Xn; R22 Repr.Cat.3; R62 Repr.Cat.3; R63 T; R48/23 R67
TRIPHENYL PHOSPHATE UNLABELED	(CAS-No.) 115-86-6 (EC-No.) 204-112-2	1.04	N; R51/53

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
CHLOROFORM-D (D, 99.8%)	(CAS-No.) 865-49-6 (EC-No.) 212-742-4 (EC Index-No.) 602-006-00-4 (Unlabeled)	98.96	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 Repr. 2, H361 STOT SE 3, H336 STOT RE 1, H372
TRIPHENYL PHOSPHATE UNLABELED	(CAS-No.) 115-86-6 (EC-No.) 204-112-2	1.04	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Name	Product identifier	%	GHS-US classification
CHLOROFORM-D (D, 99.8%)	(CAS-No.) 865-49-6	98.96	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 Repr. 2, H361 STOT SE 3, H336 STOT RE 1, H372
TRIPHENYL PHOSPHATE UNLABELED	(CAS-No.) 115-86-6	1.04	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of R- and H- phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Move out of dangerous area. Consult a physician and show this safety data sheet. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). May cause cancer.
First-aid measures after inhalation	: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Allow victim to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Flush eye with water for 15 minutes. Get medical attention. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Rinse cautiously with water for several minutes. Get medical advice/attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects	: Causes damage to organs (central nervous system, liver, blood) (oral, dermal, Inhalation). Suspected of causing cancer (in contact with skin, if inhaled, if swallowed).
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/effects after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Avoid breathing dust, mist or spray.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for preventive fire protection.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, mist or spray.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Do not eat, drink or smoke when using this product. Wash Both hands thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a cool, dry and well-ventilated place. Opened containers must be carefully resealed and kept upright to prevent leakage.

Storage conditions : Store at room temperature away from light and moisture.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10.00000000 ppm Confirmed animal carcinogen with unknown relevance to humans.
USA OSHA	OSHA PEL (TWA) (ppm)	2 ppm

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

CHLOROFORM-D (D, 99.8%) (865-49-6)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10.00000000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Central Nervous system impairment. Liver damage. Embryo/fetal damage. Confirmed animal carcinogen with unknown relevance to humans.
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	9.78 mg/m <sup>3</sup> Basis: USA. NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (STEL) (ppm)	2 ppm Basis: USA. NIOSH Recommended Exposure Limits
USA NIOSH	Remark (NIOSH)	Potential Occupational Carcinogen. See Appendix A.
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	9.78 mg/m <sup>3</sup> Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (TWA) (ppm)	2 ppm Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	240 mg/m <sup>3</sup> Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants.
USA OSHA	OSHA PEL (Ceiling) (ppm)	50 ppm Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants.
USA OSHA	Remark (OSHA)	The value in mg/m <sup>3</sup> is approximate. Ceiling limit is to be determined from breathing-zone air samples. Value: PEL Control Parameters: 2 ppm / 9.78 mg/m <sup>3</sup> Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107)
TRIPHENYL PHOSPHATE UNLABELED (115-86-6)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> Remark: Not classifiable as a human carcinogen. Cholinesterase inhibition.
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> Remark: Not classifiable as a human carcinogen. Cholinesterase inhibition.

### 8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus. Avoid all unnecessary exposure.



Hand protection : Wear protective gloves.  
Eye protection : Wear safety glasses with side shields (or goggles) and a face shield. Chemical goggles or safety glasses.  
Skin and body protection : Wear complete suit protecting against chemicals according to concentration and amount of substance. Use suitable gloves. Use proper glove removal technique. Wash and dry hands. Wear suitable protective clothing.  
Respiratory protection : Wear appropriate NIOSH/MSHA approved respirator. Wear appropriate mask.  
Other information : Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

Physical state : Liquid  
Appearance : Liquid, clear  
Molecular mass : 120.38 g/mol (Labeled)  
Color : Colorless  
Odor : Characteristic  
Odor threshold : No data available  
pH : No data available  
Relative evaporation rate (butyl acetate=1) : No data available  
Melting point : -63 °C (-81 °F)  
Freezing point : No data available

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Boiling point	: 60.5 - 61.5 °C (140.9 - 142.7 °F)
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable
Vapor pressure	: 213.3 hPa (160.0 mmHg) at 20.0 °C (68.0 °F)
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 1.492 g/ml at 25 °C (77 °F)
Solubility	: No data available
Log Pow	: 1.97
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Not available. Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong oxidizing agents, Strong bases, Magnesium, Sodium/Sodium oxides, Lithium. Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

Formed under fire conditions: Carbon oxides, Hydrogen chloride gas. fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D	
LD50 oral rat	695 mg/kg
LD50 dermal rabbit	> 20000 mg/kg
LC50 inhalation rat (mg/l)	47702 mg/m <sup>3</sup> 4 h
ATE CLP (oral)	695.000 mg/kg body weight
ATE CLP (vapors)	47.702 mg/l/4h
ATE CLP (dust, mist)	47.702 mg/l/4h
CHLOROFORM-D (D, 99.8%) (865-49-6)	
LD50 oral rat	908 mg/kg Remarks: Behavioral: Change in motor activity (specific assay). Behavioral: Ataxia. Lungs, Thorax, or Respiration: Respiratory stimulation.
LD50 dermal rabbit	> 20000 mg/kg
ATE CLP (oral)	908.000 mg/kg body weight
ATE CLP (gases)	700.000 ppmV/4h
ATE CLP (vapors)	3.000 mg/l/4h
ATE CLP (dust, mist)	0.500 mg/l/4h
TRIPHENYL PHOSPHATE UNLABELED (115-86-6)	
LD50 oral rat	> 20000 mg/kg
LD50 dermal rabbit	> 7900 mg/kg

Skin corrosion/irritation : Causes skin irritation.

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Suspected of causing cancer (in contact with skin, if inhaled, if swallowed).

<b>CHLOROFORM-D (D, 99.8%) (865-49-6)</b>	
Carcinogenicity, oral, rat	Tumorigenic: Carcinogenic by RTECS criteria. Leukemia.
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: May cause damage to organs (central nervous system, blood, liver, cardiovascular system, kidneys) through prolonged or repeated exposure (in contact with skin, if inhaled, if swallowed).
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Harmful if swallowed.
IARC group	: 2B
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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<b>0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D</b>	
LC50 fish 1	162 mg/l <i>Leuciscus idus</i> (Golden orfe) - 48 h
EC50 Daphnia 1	79 mg/l <i>Daphnia magna</i> (Water flea) - 48 h
ErC50 (algae)	500 mg/l 24 h

<b>CHLOROFORM-D (D, 99.8%) (865-49-6)</b>	
LC50 fish 1	162 mg/l <i>Leuciscus idus</i> (Golden orfe) - 48 h
LC50 other aquatic organisms 1	97 mg/l Other fish - 96 h
EC50 Daphnia 1	79 mg/l <i>Daphnia magna</i> (Water flea) - 24 h
EC50 other aquatic organisms 1	51.6 mg/l Immobilization EC50 - <i>Daphnia magna</i> (Water flea) - 48 h
LC50 fish 2	121 mg/l <i>Danio rerio</i> (Zebra fish) - 96 h
ErC50 (algae)	500 mg/l 24 h
LOEC (acute)	Inhalation - Rat - male - 500 ppm - 6 h
NOEC (chronic)	122 mg/l <i>Oryzias latipes</i> (Japanese rice fish) - 10 d
NOEC chronic fish	24 mg/l <i>Oncorhynchus mykiss</i> (Rainbow trout) - 96 h
NOEC chronic algae	120 mg/l <i>Daphnia magna</i> (Water flea) - 11 d

<b>TRIPHENYL PHOSPHATE UNLABELED (115-86-6)</b>	
LC50 fish 1	0.87 mg/l <i>Pimephales promelas</i> (fathead minnow) - 96 h
EC50 Daphnia 1	1 mg/l <i>Daphnia magna</i> (Water flea) - 48 h
ErC50 (algae)	1 mg/l <i>Desmodesmus subspicatus</i> (green algae) - 72 h

### 12.2. Persistence and degradability

### 12.3. Bioaccumulative potential

<b>0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D</b>	
Log Pow	1.97

<b>CHLOROFORM-D (D, 99.8%) (865-49-6)</b>	
BCF fish 1	-0.11 mg/l <i>Lepomis macrochirus</i> (Bluegill) - 14 d
Bioconcentration factor (BCF REACH)	6

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### CHLOROFORM-D (D, 99.8%) (865-49-6)

Log Pow 1.97

### TRIPHENYL PHOSPHATE UNLABELED (115-86-6)

Log Pow 4.6

#### 12.4. Mobility in soil

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose as unused product. Avoid release to the environment.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No.(DOT) : 1888

DOT NA no. UN1888

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Chloroform

Class (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Hazard labels (DOT) : 6.1 - Poison



Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : 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).

N36 - Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum.

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

DOT Packaging Exceptions (49 CFR 173.xxx) : 153

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT RQ : 10 lbs

Marine pollutant : No

### 14.3. Additional information

Other information : No supplementary information available.



# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Overland transport

Packing group (ADR) : III  
Class (ADR) : 6.1 - Toxic substances  
Hazard identification number (Kemler No.) : 60  
Classification code (ADR) : T1  
Hazard labels (ADR) : 6.1 - Toxic substances



Orange plates :

Tunnel restriction code (ADR) : E  
Limited quantities (ADR) : 5l  
EAC : 2Z  
Excepted quantities (ADR) : E1

### Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"  
MFAG-No : 151

### Air transport

DOT Quantity Limitations Passenger aircraft/rail : 60 L  
(49 CFR 173.27)  
DOT Quantity Limitations Cargo aircraft only (49 : 220 L  
CFR 175.75)  
Civil Aeronautics Law : Toxic and infectious substances/Toxic substances

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

### 14.6. 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

#### 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

Listed on the United States SARA Section 302  
Subject to reporting requirements of United States SARA Section 313

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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#### CHLOROFORM-D (D, 99.8%) (865-49-6)

SARA Section 302 Threshold Planning Quantity (TPQ)	Subject to reporting requirements of United States SARA Section 302
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SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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SARA Section 313 - Emission Reporting	Subject to reporting requirements of United States SARA Section 313
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#### TRIPHENYL PHOSPHATE UNLABELED (115-86-6)

SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
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SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
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# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 15.2. International regulations

#### CANADA

##### 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

### 15.3. US State regulations

#### 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D()

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Yes
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

#### CHLOROFORM-D (D, 99.8%) (865-49-6)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	Yes	Yes	

#### TRIPHENYL PHOSPHATE UNLABELED (115-86-6)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

#### CHLOROFORM-D (D, 99.8%) (865-49-6)

##### State or local regulations

U.S. - Massachusetts - Right To Know List  
U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - New Jersey - Right to Know Hazardous Substance List

#### TRIPHENYL PHOSPHATE UNLABELED (115-86-6)

##### State or local regulations

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound. None.

Full text of R-, H- and EUH-phrases:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhalation) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Repr. 2	Reproductive toxicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2

# 0.0485 M TRIPHENYL PHOSPHATE IN CHLOROFORM-D

DLM-77

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
R22	Harmful if swallowed
R23	Toxic by inhalation
R36/38	Irritating to eyes and skin
R40	Limited evidence of a carcinogenic effect
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
R67	Vapors may cause drowsiness and dizziness
N	Dangerous for the environment
T	Toxic
Xi	Irritant
Xn	Harmful

NFPA health hazard

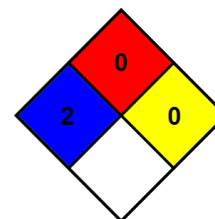
: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



### Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

CIL Mixture SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*