



# DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 6/30/2022 Revision date: 4/26/2023 Supersedes: 6/30/2022 Version: 1.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE  
Product code : ULM-11373-S

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Cambridge Isotope Laboratories, Inc.  
50 Frontage Rd  
01810  
ANDOVER, MA, 01810  
USA  
T 1-800-322-1174  
[cilsales@isotope.com](mailto:cilsales@isotope.com) - [www.isotope.com](http://www.isotope.com)

#### 1.4. Emergency telephone number

Emergency number : 1-703-741-5970  
Chemtrec 1-800-424-9300 24 hours

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture



##### GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (dermal) Category 4	H312	Harmful in contact with skin
Acute toxicity (inhalation) Category 4	H332	Harmful if inhaled
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :  

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H225 - Highly flammable liquid and vapor  
H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled  
H319 - Causes serious eye irritation

Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 - Keep container tightly closed.  
P240 - Ground/Bond container and receiving equipment.

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P241 - Use explosion-proof electrical/ventilating/lighting equipment.  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.  
P302+P352 - If on skin: Wash with plenty of water.  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 - Call a poison center or doctor if you feel unwell.  
P322 - Specific treatment (see supplemental first aid instruction on this label)  
P330 - Rinse mouth.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P370+P378 - In case of fire: Use media other than water to extinguish.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
ACETONITRILE UNLABELED	CAS-No.: 75-05-8	99.987	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%)	CAS-No.: 107-66-4	0.013	Skin Corr. 1A, H314 Eye Dam. 1, H318 Carc. 2, H351

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

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### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Evacuate area.
First-aid measures after inhalation	: Move the affected person away from the contaminated area and into the fresh air. If not breathing, give artificial respiration. Call a physician immediately. Get immediate medical advice/attention.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Immediately call a poison center or doctor/physician. Specific measures (see Hazard pictograms (CLP) on this label). Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Immediately rinse with water for a prolonged period while holding the eyelids wide open. Get immediate medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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

Potential Adverse human health effects and symptoms	: Treat as cyanide poisoning. Always have on hand a cyanide first-aid kit, together with proper instructions. The onset of symptoms is generally delayed pending conversion to cyanide. Nausea, Vomiting, Diarrhea, Headache, Dizziness, Rash, Cyanosis, Excitement, Depression, Drowsiness, Impaired judgment, Lack of coordination, Stupor, Death. Lungs - Lung edema - Based on human evidence. Harmful if swallowed. Harmful in contact with skin. 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.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

#### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO <sub>2</sub> ).
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#### 5.2. Specific hazards arising from the chemical

Fire hazard	: Highly flammable liquid and vapor.
Explosion hazard	: May form flammable/explosive vapor-air mixture.

#### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Wear a self contained breathing apparatus. Fight fire with normal precautions from a reasonable distance.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear self-contained breathing apparatus, rubber boots and thick rubber gloves.
Other information	: Use water spray to cool unopened containers.

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### SECTION 6: Accidental release measures

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

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment as required. Avoid breathing vapors, mist, gas. Ensure adequate air ventilation. Evacuate unnecessary personnel. Eliminate all ignition sources if safe to do so. Provide adequate ventilation to minimize dust and/or vapor concentrations. Special attention should be given to low areas/pits where flammable vapors can accumulate.

##### 6.1.2. For emergency responders

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

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

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

For containment : Dike and contain spill. Disposal should be in accordance with applicable Federal, State and local regulations.

Methods for cleaning up : Collect spillage. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal.

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Avoid all eye and skin contact and do not breathe vapor and mist. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : No open flames. No smoking. Use only non-sparking tools.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

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

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof Lighting equipment, ventilating equipment.

Storage conditions : Store refrigerated (-5 °C to 5 °C). Protect from light.

Incompatible materials : Heat sources.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

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DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA [ppm]	20 ppm Lower Respiratory Tract irritation. Not classifiable as a human carcinogen.
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA [1]	70 mg/m <sup>3</sup> The value in mg/m <sup>3</sup> is approximate.
OSHA PEL TWA [2]	40 ppm The value in mg/m <sup>3</sup> is approximate.
<b>USA - NIOSH - Occupational Exposure Limits</b>	
NIOSH REL TWA	34 mg/m <sup>3</sup> Forms Cyanide in the body.
NIOSH REL TWA [ppm]	20 ppm Forms Cyanide in the body.
<b>ACETONITRILE UNLABELED (75-05-8)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA [ppm]	20 ppm Lower Respiratory Tract irritation. Not classifiable as a human carcinogen.
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA [1]	70 mg/m <sup>3</sup> The value in mg/m <sup>3</sup> is approximate.
OSHA PEL TWA [2]	40 ppm The value in mg/m <sup>3</sup> is approximate.
<b>USA - NIOSH - Occupational Exposure Limits</b>	
NIOSH REL TWA	34 mg/m <sup>3</sup> Forms Cyanide in the body.
NIOSH REL TWA [ppm]	20 ppm Forms Cyanide in the body.
<b>DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA	5 mg/m <sup>3</sup> USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	Danger of cutaneous absorption
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA [1]	5 mg/m <sup>3</sup> USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA PEL TWA [2]	1 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA PEL STEL [1]	10 mg/m <sup>3</sup> California permissible exposure limits for chemical contaminants (Title 8, Article 107)
OSHA PEL STEL [2]	1 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107)
<b>USA - NIOSH - Occupational Exposure Limits</b>	
NIOSH REL TWA	5 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	1 ppm USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL	10 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL [ppm]	2 ppm USA. NIOSH Recommended Exposure Limits

## 8.2. Appropriate engineering controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety procedures.  
Environmental exposure controls : Avoid release to the environment.

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### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Protective clothing. Protective goggles. Gloves. Self-contained breathing apparatus.

<b>Materials for protective clothing:</b>
Wear suitable protective clothing and gloves
<b>Hand protection:</b>
Wear suitable protective clothing and gloves
<b>Eye protection:</b>
Chemical goggles or face shield with safety glasses
<b>Skin and body protection:</b>
Wear suitable protective clothing, gloves and eye/face protection
<b>Respiratory protection:</b>
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Appearance	: Liquid, clear.
Color	: Colorless
Odor	: ether-like
Odor threshold	: No data available
pH	: No data available
Melting point	: -48 °C (-54°F)
Freezing point	: No data available
Boiling point	: 81 – 82 °C (178 - 180 °F)
Flash point	: 2 °C (35.6 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor.
Vapor pressure	: 73.18 hPa (54.89 mmHg) at 15°C (59 °F), 119.81 hPa (89.86 mmHg) at 25°C(77 °F)
Relative vapor density at 20°C	: 1.42 - (Air = 1.0)
Relative density	: No data available
Density	: 0.786 g/ml
Molecular mass	: 41.05 g/mol
Solubility	: Water: 100 %
Partition coefficient n-octanol/water (Log Pow)	: -0.34
Auto-ignition temperature	: 523 °C (973 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosion limits : 4.4 – 16 vol %  
Explosive properties : No data available  
Oxidizing properties : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Vapors may form explosive mixture with air.

### 10.2. Chemical stability

See storage and expiration date on CoA.

### 10.3. Possibility of hazardous reactions

Highly flammable liquid and vapor.

### 10.4. Conditions to avoid

Heat. Open flame. Direct sunlight. Sparks. Extremely high or low temperatures.

### 10.5. Incompatible materials

Acids, Bases, Oxidizing agents, Reducing agents, Alkali metals.

### 10.6. Hazardous decomposition products

May release flammable gases. Carbon oxides (CO, CO<sub>2</sub>). Nitrogen oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Harmful in contact with skin.  
Acute toxicity (inhalation) : Harmful if inhaled.

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE	
LD50 oral rat	2460 mg/kg
LD50 dermal rabbit	2000 mg/kg
LC50 Inhalation - Rat	≥ 26.8 mg/l
LC50 Inhalation - Rat [ppm]	7551 ppm - 8h
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	2000 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

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ACETONITRILE UNLABELED (75-05-8)	
LD50 oral rat	2460 mg/kg
LD50 dermal rabbit	2000 mg/kg
LC50 Inhalation - Rat	≥ 26.8 mg/l
LC50 Inhalation - Rat [ppm]	7551 ppm - 8h
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	2000 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
LD50 oral rat	> 2000 mg/kg male and female (OECD Test Guideline 401)
LC50 Inhalation - Rat	Lung irritation
Skin corrosion/irritation	: Not classified
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
pH	1.4 at 23 °C (73 °F)
Serious eye damage/irritation	: Causes serious eye irritation.
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
pH	1.4 at 23 °C (73 °F)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
NOAEL (oral,rat,90 days)	30 mg/kg bodyweight/day male and female - (No observed adverse effect level) - RTECS: TB9605000
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Treat as cyanide poisoning. Always have on hand a cyanide first-aid kit, together with proper instructions. The onset of symptoms is generally delayed pending conversion to cyanide. Nausea, Vomiting, Diarrhea, Headache, Dizziness, Rash, Cyanosis, Excitement, Depression, Drowsiness, Impaired judgment, Lack of coordination, Stupor, Death. Lungs - Lung edema - Based on human evidence. Harmful if swallowed. Harmful in contact with skin. 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.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.



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### 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.

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE	
LC50 - Fish [1]	1640 mg/l Pimephales promelas (fathead minnow) - 96h
EC50 - Crustacea [1]	3600 mg/l Daphnia magna (Water flea) - 48h
NOEC (chronic)	640 mg/l Daphnia magna (Water flea) - 14d
ACETONITRILE UNLABELED (75-05-8)	
LC50 - Fish [1]	1640 mg/l Pimephales promelas (fathead minnow) - 96h
EC50 - Crustacea [1]	3600 mg/l Daphnia magna (Water flea) - 48h
NOEC (chronic)	640 mg/l Daphnia magna (Water flea) - 14d
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
LC50 - Fish [1]	> 100 mg/l static test LC50 - Danio rerio (zebra fish) - 96 h
EC50 - Crustacea [1]	> 100 mg/l semi-static test EC50 - Daphnia magna (Water flea) - 48 h (OECD Test Guideline 202)
EC50 - Other aquatic organisms [1]	> 10000 mg/l static test EC50 - activated sludge - 3 h (OECD Test Guideline 209)
ErC50 algae	> 100 mg/l static test ErC50 - Desmodesmus subspicatus (green algae) - 72 h (OECD Test Guideline 201)

#### 12.2. Persistence and degradability

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE	
Persistence and degradability	Biodegradability Result: - Readily biodegradable.
ACETONITRILE UNLABELED (75-05-8)	
Persistence and degradability	Biodegradability Result: - Readily biodegradable.
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
Persistence and degradability	Biodegradability aerobic - Exposure time 28 d Result: > 98 % - Inherently biodegradable (OECD Test Guideline 302B).

#### 12.3. Bioaccumulative potential

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE	
Partition coefficient n-octanol/water (Log Pow)	-0.34
Bioaccumulative potential	No bioaccumulation is to be expected (log Pow <= 4).
ACETONITRILE UNLABELED (75-05-8)	
Partition coefficient n-octanol/water (Log Pow)	-0.34
Bioaccumulative potential	No bioaccumulation is to be expected (log Pow <= 4).
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
BCF - Fish [1]	2 mg/l Cyprinus carpio (Carp) - 6 Weeks at 25 °C - (dibutyl hydrogen phosphate)

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### DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)

Bioconcentration factor (BCF REACH)	< 0.7 Remarks: Does not bioaccumulate.
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### 12.4. Mobility in soil

#### DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE

Ecology - soil	Not expected to absorb on soil.
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#### ACETONITRILE UNLABELED (75-05-8)

Ecology - soil	Not expected to absorb on soil.
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### 12.5. Other adverse effects

Other adverse effects : Avoid release to the environment. Disposal must be done according to official regulations. May cause long lasting harmful effects to aquatic life.

## SECTION 13: Disposal considerations

### 13.1. Disposal 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 of as unused product.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

### 14.1. UN number

DOT NA No	: UN1648
UN-No. (TDG)	: UN1648
UN-No. (IMDG)	: 1648
UN-No. (IATA)	: 1648

### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Acetonitrile
Proper Shipping Name (TDG)	: ACETONITRILE
Proper Shipping Name (IMDG)	: ACETONITRILE
Proper Shipping Name (IATA)	: Acetonitrile

### 14.3. Transport hazard class(es)

**DOT**

Transport hazard class(es) (DOT) : 3

Hazard labels (DOT) : 3



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### TDG

Transport hazard class(es) (TDG) : 3  
Hazard labels (TDG) : 3



### IMDG

Transport hazard class(es) (IMDG) : 3  
Hazard labels (IMDG) : 3



### IATA

Transport hazard class(es) (IATA) : 3  
Hazard labels (IATA) : 3



### 14.4. Packing group

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

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### DOT

UN-No.(DOT) : UN1648  
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). 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.  
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) : 150  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Packaging Bulk (49 CFR 173.xxx) : 242  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

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DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"

### TDG

UN-No. (TDG)	: UN1648
Explosive Limit and Limited Quantity Index	: 1 L
Excepted quantities (TDG)	: E2
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: 5 L
Emergency Response Guide (ERG) Number	: 127

### IMDG

Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	: S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Stowage category (IMDG)	: B
Stowage and handling (IMDG)	: SW2
Flash point (IMDG)	: 2°C c.c.
Properties and observations (IMDG)	: Colourless, volatile liquid. Flashpoint: 2°C c.c. Explosive limits: 3% to 16% Miscible with water. When involved in a fire, evolves toxic cyanide fumes. Harmful if swallowed, by skin contact or by inhalation.
MFAG-No	: 127

### IATA

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
ERG code (IATA)	: 3L

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

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE

Subject to reporting requirements of United States SARA Section 313  
Listed on EPA Hazardous Air Pollutant (HAPS)

# DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE

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DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE	
CERCLA RQ	5000 lb
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
ACETONITRILE UNLABELED	75-05-8	Present	Active	
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%)	107-66-4	Not present	-	

ACETONITRILE UNLABELED (75-05-8)	
Subject to reporting requirements of United States SARA Section 313 Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Acute Health Hazard

## 15.2. International regulations

### CANADA

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE
Listed on the Canadian DSL (Domestic Substances List)

ACETONITRILE UNLABELED (75-05-8)
Listed on the Canadian DSL (Domestic Substances List)

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) (107-66-4)
Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

No additional information available

### National regulations

DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE
Listed on INSQ (Mexican National Inventory of Chemical Substances)

# DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE

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### ACETONITRILE UNLABELED (75-05-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 15.3. US State regulations

#### DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%) 100 UG/ML IN ACETONITRILE

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
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Component	State or local regulations
ACETONITRILE UNLABELED(75-05-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
DI-N-BUTYL PHOSPHATE UNLABELED (CP 95%)(107-66-4)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 04/26/2023

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.

#### Full text of H-phrases

H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer

Safety Data Sheet (SDS), USA

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.