

Safety Data Sheet dated 29/1/2019, version 7

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

- 1.1. Product identifier
Mixture identification:
Trade name: DUNAPOL C 035 HL POLYOL
Trade code: 222018
Product type:
Based polyol mixture
- 1.2. Relevant identified uses of the substance or mixture and uses advised against
Component for the production of polyurethanes
- 1.3. Details of the supplier of the safety data sheet
Company:
DUNA-Corradini S.p.A.
Via Modena-Carpi, 388
41019 Soliera (MO)
Italy
Phone: +39 059 893911
- Competent person responsible for the safety data sheet:
safety@dunagroup.com
- 1.4. Emergency telephone number
DUNA-Corradini S.p.A.
phone +39 059 893911
(8.00 - 18.00)

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture
EC regulation criteria 1272/2008 (CLP):
The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
Adverse physicochemical, human health and environmental effects:
No other hazards
- The full text for substance classification is reported in section 16.
- 2.2. Label elements
The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).
Hazard pictograms:
None
Hazard statements:
None
Precautionary statements:
None
Special Provisions:
EUH210 Safety data sheet available on request.
Special provisions according to Annex XVII of REACH and subsequent amendments:
None
- 2.3. Other hazards
vPvB Substances: None - PBT Substances: None
Other Hazards:
No other hazards

SECTION 3: Composition/information on ingredients

- 3.1. Substances
N.A.
- 3.2. Mixtures
Hazardous components within the meaning of the CLP regulation and related classification:

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Qty	Name	Ident. Number	Classification
>= 5% - < 10%	Tris(2-chloro-isopropyl) phosphate	EC: 911-815-4 REACH No.: 01-2119486772-26	⚠ 3.1/4/Oral Acute Tox. 4 H302
>= 1% - < 5%	triethyl phosphate	Index number: 015-013-00-7 CAS: 78-40-0 EC: 201-114-5 REACH No.: 01-2119492852-28	⚠ 3.1/4/Oral Acute Tox. 4 H302 ⚠ 3.3/2 Eye Irrit. 2 H319

The full text of the hazard statements can be found in section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Wash with plenty of water and soap.

Immediately take off all contaminated clothing and dispose off safely.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of ingestion:

Seek a medical examination immediately and present this safety-data sheet.

In case of inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

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

Treatment:

Nothing specific.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Water spray

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

In case of fire, isolate promptly the area of the accident removing all the people. Actions which could involve a risk or are undertaken without the suitable training must be avoided.

Use suitable breathing apparatus.

Move undamaged containers from immediate hazard area if it can be done safely.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures
 - Wear personal protection equipment.
 - Remove persons to safety.
 - See protective measures under point 7 and 8.
- 6.2. Environmental precautions
 - Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
 - In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
- 6.3. Methods and material for containment and cleaning up
 - Suitable material for taking up: absorbing material, organic, sand.
 - Wash with plenty of water.
 - Contain and collect scrubbing water in compliance with the existing legislation.
- 6.4. Reference to other sections
 - See also section 8 and 13.

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling
 - Avoid contact with skin and eyes and inhalation of vapors and mists.
 - Keep container tightly closed and always ensure adequate ventilation in environments in which the manipulation is done.
 - The product may generate vapors under pressure inside the container: open the cap of the container gradually and cautiously, gradually leave vent any vapors.
 - Before transfer operations, make sure that there are no incompatible residual materials in the receiving container.
 - Contaminated clothing should be changed before entering eating areas.
 - At work do not eat, do not drink and do not smoke.
- 7.2. Conditions for safe storage, including any incompatibilities
 - Store in a dry place, protecting containers from contact with water and humidity.
 - Keep away from sources of heat, flames and sparks.
 - Incompatible materials: see section 10.
 - It is recommended that the premises are cool and well-aerated to ensure fresh air all the time in the storage area.
- 7.3. Specific end use(s)
 - Refer to subsection 1.2 of this Material Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters
 - No occupational exposure limit available
- DNEL Exposure Limit Values
 - Tris(2-chloro-isopropyl)phosphate
 - Worker Industry: 22.4 ppm - Consumer: 11.2 ppm - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
 - Worker Industry: 5.82 ppm - Consumer: 1.46 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
 - Worker Industry: 8 mg/kg bw/d - Consumer: 4 mg/kg bw/d - Exposure: Human Dermal - Frequency: Short Term, systemic effects
 - Worker Industry: 2.08 mg/kg bw/d - Consumer: 1.04 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects
 - Consumer: 0.52 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects
 - triethyl phosphate - CAS: 78-40-0
 - Worker Industry: 26.6 mg/kg bw/d - Consumer: 13.3 mg/kg bw/d - Exposure: Human Dermal - Frequency: Short Term, systemic effects
 - Worker Industry: 3.33 mg/kg bw/d - Consumer: 1.66 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects
 - Worker Industry: 93.6 ppm - Consumer: 23.12 ppm - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
 - Worker Industry: 11.7 ppm - Consumer: 2.89 ppm - Exposure: Human Inhalation -

Frequency: Long Term, systemic effects

Consumer: 13.3 mg/kg bw/d - Exposure: Human Oral - Frequency: Short Term, systemic effects

Consumer: 1.66 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects

Worker Industry: 26.6 mg/kg bw/d - Consumer: 13.3 mg/kg bw/d - Exposure: Human Dermal - Frequency: Short Term, local effects

Worker Industry: 3.33 mg/kg bw/d - Consumer: 13.3 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, local effects

Worker Industry: 93.6 ppm - Consumer: 23.12 ppm - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Industry: 11.7 ppm - Consumer: 23.12 ppm - Exposure: Human Inhalation - Frequency: Long Term, local effects

PNEC Exposure Limit Values

Tris(2-chloro-isopropyl)phosphate

Target: Soil - Value: 1.7 mg/kg/d

Target: STP - Value: 7.84 mg/l

Target: Freshwater sediments - Value: 13.4 mg/kg/d

Target: Marine water sediments - Value: 1.34 mg/kg/d

Target: Marine water - Value: 0.064 mg/l

Target: Fresh Water - Value: 0.64 mg/l

Target: Intermittent release - Value: 0.51 mg/l

Target: Food chain - Value: 11.6 mg/l

triethyl phosphate - CAS: 78-40-0

Target: Marine water - Value: 0.0632 mg/l

Target: Fresh Water - Value: 0.632 mg/l

Target: Sewage treatment plants - Value: 298.5 mg/l

8.2. Exposure controls

Eye protection:

Use safety glasses in compliance with regulation EN 166 in order to avoid exposure to liquid drops, sprays or dust.

Protection for skin:

PPE for the body should be selected based on the risks of the job.

We recommend the use of heavy cotton clothing or disposable Tyvek.

Protection for hands:

Wear resistant gloves when in contact with chemicals, in accordance with EN 374.

Among the examples of the materials for gloves that can offer appropriate protection are: butyl rubber, chlorinated polyethylene, polyethylene, laminates of copolymers of ethylene / vinyl alcohol (EVAL), polychloroprene (neoprene), nitrile/butadiene rubber (NBR or nitrile), polyvinyl chloride (PVC or vinyl), fluoroelastomer (Viton).

In the case of prolonged or frequently repeated contact, we recommend a protection class of at least 5 (breakthrough time greater than 240 minutes according to the standard EN 374).

If you are planning a short contact, it is recommended a protection class of at least 3 (breakthrough time greater than 60 minutes according to the standard EN 374).

Decontaminate and dispose of contaminated gloves.

Wear protective gloves in the handling of the just obtained polymer to avoid contact with traces of residual material which can be dangerous in contact with the skin.

Respiratory protection:

Breathing apparatuses should be used (if available) when there's the possibility to exceed the occupational exposure limit values. Otherwise, wear breathing apparatuses when side effects such as irritation to airways appear or when specified in your chemical risk assessment.

If necessary use validated breathing apparatus with specific filters for organic vapours absorption and a pre-filter for particulate.

In situations where the atmospheric levels may exceed the level of effectiveness of an air-purifying respirator, use a respirator in positive pressure (with air supply or autonomous).

Please use the following air-purifying respirator approved by the EC: Organic vapor cartridge with pre-filter, type AP2.

Thermal Hazards:

Wear protective gloves when handling the just formed polymer in order to avoid burns.

Environmental exposure controls:

Refer to section 7 and section 13.
Appropriate engineering controls:
Provide a ventilation system (localised or not) in order to keep the concentrations below the occupational exposure limit values. Air intake systems must be designed so that air is removed from vapours/aerosols sources and from people working in the area. Provide eyewash fountains and safety showers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Appearance and colour:	Pale yellow liquid	--	--
Odour:	Slightly amine	--	--
Odour threshold:	Not available	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	Not available	--	--
Flash point:	No	--	--
Evaporation rate:	N.A.	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	Not available	--	--
Vapour density:	N.A.	--	--
Relative density:	1.090 g/cc	--	--
Solubility in water:	Miscible	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	Not available	--	--
Auto-ignition temperature:	Not pyrophoric	--	--
Decomposition temperature:	Not available	--	--
Viscosity:	680-780 cps (25°C)	--	--
Explosive properties:	Not explosive	--	--
Oxidizing properties:	Not oxydant	--	--

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

This product has no hazardous reactivity under normal conditions of use, handling and storage.

10.2. Chemical stability

The product is stable under the storage conditions described in Section 7.

10.3. Possibility of hazardous reactions

This product has no possibility of hazardous reactions under normal conditions of handling and storage.

10.4. Conditions to avoid

Avoid heating the product at high temperatures; heating the product in closed containers at temperatures higher than those indicated in paragraph 7 may lead to development of pressure.

10.5. Incompatible materials

Avoid contact with oxidizing agents, acids and bases.

Avoid unintended contact with isocyanates, which generates exothermic reaction of polymerization, potentially accompanied by rapid expansion.

10.6. Hazardous decomposition products

Oxides of nitrogen and carbon oxides.

Phosphorus oxides.

Hydrochloric acid.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:

DUNAPOL C 035 HL POLYOL

a) acute toxicity

Not classified

Based on available data, the classification criteria are not met

b) skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

c) serious eye damage/irritation

Not classified

Based on available data, the classification criteria are not met

d) respiratory or skin sensitisation

Not classified

Based on available data, the classification criteria are not met

e) germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

f) carcinogenicity

Not classified

Based on available data, the classification criteria are not met

g) Reproductive toxicity/toxicity to fertility

Not classified

- Based on available data, the classification criteria are not met
- h) STOT-single exposure
Not classified
Based on available data, the classification criteria are not met
- i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met
- j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met
- Toxicological information of the main substances found in the product:
- Tris(2-chloro-isopropyl)phosphate
- a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 500 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat > 4.6 mg/l - Duration: 4h
- b) skin corrosion/irritation:
Based on available data, the classification criteria are not met
- c) serious eye damage/irritation:
Based on available data, the classification criteria are not met
- d) respiratory or skin sensitisation:
Based on available data, the classification criteria are not met
- e) germ cell mutagenicity:
Based on available data, the classification criteria are not met
- f) carcinogenicity:
Based on available data, the classification criteria are not met
- g) Reproductive toxicity/toxicity to fertility:
Based on available data, the classification criteria are not met
- h) STOT-single exposure:
Based on available data, the classification criteria are not met
- i) STOT-repeated exposure:
Based on available data, the classification criteria are not met
- j) aspiration hazard:
Based on available data, the classification criteria are not met
- triethyl phosphate - CAS: 78-40-0
- a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 1600 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit = 20000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat = 8817 mg/l - Duration: 4h - Source: OECD TG 403
- b) skin corrosion/irritation:
-Result: Negative - Based on available data, the classification criteria are not met
- c) serious eye damage/irritation:
Test: Eye Irritant - Result: Positive
- d) respiratory or skin sensitisation:
Based on available data, the classification criteria are not met
- e) germ cell mutagenicity:
Based on available data, the classification criteria are not met
- f) carcinogenicity:
Based on available data, the classification criteria are not met
- g) Reproductive toxicity/toxicity to fertility:
Based on available data, the classification criteria are not met
- h) STOT-single exposure:
Based on available data, the classification criteria are not met
- i) STOT-repeated exposure:
Based on available data, the classification criteria are not met
- j) aspiration hazard:
Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
Use suitable abatement methods in order to prevent the release of the substance into the environment.

DUNAPOL C 035 HL POLYOL

Not classified for environmental hazards

Based on available data, the classification criteria are not met

Tris(2-chloro-isopropyl)phosphate

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 51 mg/l - Duration h: 96

Endpoint: LC50 - Species: Daphnia - Daphnia magna = 131 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae - Scenedesmus Subspicatus = 82 mg/l - Duration h: 72

triethyl phosphate - CAS: 78-40-0

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish - Danio Rerio (zebrafish) > 100 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia - Daphnia magna = 900 mg/l - Duration h: 24

Endpoint: LC50 - Species: Fish - Leuciscus Idus = 2140 mg/l - Duration h: 48

Endpoint: LC50 - Species: Fish - Oryzias Latipes > 500 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae - Desmodesmus subcapitata = 901 mg/l - Duration h: 72

Endpoint: EC10 - Species: Daphnia - Daphnia magna = 31.6 mg/l - Duration h: 504

12.2. Persistence and degradability

No data available for the product

Tris(2-chloro-isopropyl)phosphate

Biodegradability: Potentially biodegradable

12.3. Bioaccumulative potential

Tris(2-chloro-isopropyl)phosphate

Bioaccumulation: Bioaccumulative - Test: BCF - Bioconcentration factor 0.8

Bioaccumulation: Bioaccumulative - Test: Kow - Partition coefficient 2.68

12.4. Mobility in soil

Tris(2-chloro-isopropyl)phosphate

Mobility in soil: Mobile - Test: Partition coefficient soil/water 2.76

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

No data available for the product

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

SECTION 14: Transport information

14.1. UN number

Not classified as dangerous in the meaning of transport regulations.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

N.A.

14.6. Special precautions for user

N.A.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

N.A.

SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) 2015/830
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 40

Restrictions related to the substances contained:

Restriction 70

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Text of phrases referred to under heading 3:

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

Hazard class and hazard category	Code	Description
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Eye Irrit. 2	3.3/2	Eye irritation, Category 2

Paragraphs modified from the previous revision:

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

SECTION 2: Hazards identification

SECTION 3: Composition/information on ingredients

SECTION 4: First aid measures

SECTION 6: Accidental release measures

SECTION 8: Exposure controls/personal protection

SECTION 9: Physical and chemical properties

Safety Data Sheet

DUNAPOL C 035 HL POLYOL



SECTION 10: Stability and reactivity
SECTION 11: Toxicological information
SECTION 12: Ecological information
SECTION 14: Transport information
SECTION 15: Regulatory information

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.