

SAFETY DATA SHEET**Bufferlite® DU-1002****SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Product name : Bufferlite® DU-1002
Internal code : 015248WW23624

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

Not applicable.

Recommended use : UV-curable coatings, inks and matrix materials.

1.3 Details of the supplier of the safety data sheet

Supplier : DSM Desotech
 Slachthuisweg 30
 3151 XN Hoek van Holland
 Netherlands
 Tel: +31 174 315544
 www.desotech.com

e-mail address of person responsible for this SDS : resins.SDS@covestro.com

1.4 Emergency telephone number

Emergency telephone number : Netherlands: +31 174 315410

National advisory body/ Poison Centre : UK: Tel: + 44 844 892 0111
 Ireland: Tel: +353 1 837 9964

Only for the purpose of informing medical personnel in cases of acute intoxications

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Product definition : Mixture

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

Skin Sens. 1, H317
 Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

2.2 Label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 - May cause an allergic skin reaction.
 H412 - Harmful to aquatic life with long lasting effects.

Supplemental label elements : Not applicable.

Precautionary statements

General : Not applicable.

Prevention : P280 - Wear protective gloves.
 P273 - Avoid release to the environment.
 P261 - Avoid breathing vapour.

Response : P362 + P364 - Take off contaminated clothing and wash it before reuse.
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
 P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.

Storage : Not applicable.

Disposal : Not applicable.



Hazardous ingredients : Propylidyntrimethanol, ethoxylated, esters with acrylic acid
isodecyl acrylate

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.1 Substances / 3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification
			Regulation (EC) No. 1272/2008 [CLP]
Propylidyntrimethanol, ethoxylated, esters with acrylic acid	REACH #: 01-211948990-90 EC: 500-066-5 CAS: 28961-43-5	≤6.4	Eye Irrit. 2, H319 Skin Sens. 1, H317
isodecyl acrylate	REACH #: 01-2119964031-47 EC: 215-542-5 CAS: 1330-61-6 Index: 607-133-00-9	≤3.5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317 STOT SE 3, H335 Aquatic Chronic 2, H411
benzophenone	REACH #: 01-2119899704-20 EC: 204-337-6 CAS: 119-61-9	≤1.4	STOT RE 2, H373 (kidneys, liver) (oral) Aquatic Chronic 3, H412
2,6-di-tert-butyl-p-cresol	REACH #: 01-2119565113-46 EC: 204-881-4 CAS: 128-37-0	≤0.59	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)
			See Section 16 for the full text of the H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.



- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
(dense) black smoke
aldehydes
organic acids

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".



6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 15 to 30°C (59 to 86°F). Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store in original container, protected from direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Keep away from heat and direct sunlight. Inhibitor only effective in the presence of oxygen.

7.3 Specific end use(s)

Recommendations : UV-curable coatings, inks and matrix materials.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
2,6-di-tert-butyl-p-cresol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours.



Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	DNEL	Long term Inhalation	16.2 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	0.8 mg/kg bw/day	Workers	Systemic
isodecyl acrylate	DNEL	Long term Inhalation	37.5 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	4.5 mg/m ³	Consumers	Local
benzophenone	DNEL	Long term Inhalation	0.7 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	0.1 mg/kg bw/day	Workers	Systemic
2,6-di-tert-butyl-p-cresol	DNEL	Long term Inhalation	0.17 mg/m ³	Consumers	Systemic
	DNEL	Long term Dermal	0.05 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	0.05 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	3.5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	0.5 mg/kg bw/day	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	Fresh water	0.00195 mg/l	Assessment Factors
	Marine water	0.000195 mg/l	Assessment Factors
	Intermittent releases. Sewage Treatment Plant	0.0195 mg/l	Assessment Factors
	Fresh water sediment	10 mg/l	Assessment Factors
	Marine water sediment	0.0082 mg/kg dwt	-
	Soil	0.00082 mg/kg dwt	-
isodecyl acrylate	Soil	0.00587 mg/kg dwt	-
	Fresh water	0.18 mg/kg dwt	-
	Marine water	84.9 µg/l	-
	Sewage Treatment Plant	8.49 µg/l	-
	Fresh water sediment	34 mg/l	-
	Fresh water sediment	59.039 mg/kg dwt	-
benzophenone	Fresh water sediment	5.904 mg/kg dwt	-
	Soil	0.032 mg/kg dwt	-
	Fresh water	0.02 mg/l	-
	Marine water	0.002 mg/l	-
	Intermittent releases. Sewage Treatment Plant	0.035 mg/l	-
	Fresh water sediment	3.16 mg/l	-
2,6-di-tert-butyl-p-cresol	Fresh water sediment	1.1 mg/kg dwt	-
	Marine water sediment	0.11 mg/kg dwt	-
	Soil	0.31 mg/kg dwt	-
	Fresh water	0.199 µg/l	-
	Marine water	0.0199 µg/l	-
	Sewage Treatment Plant	0.17 mg/l	-
Marine water sediment	99.6 µg/kg dwt	-	
Marine water sediment	9.96 mg/kg dwt	-	



Soil	47.96 µg/kg dwt	-
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8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses with side shields.
Use eye protection according to EN 166.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. < 1 hour (breakthrough time): (0.12 mm) Nitrile gloves.
- Skin and body** : Chemical-resistant protective suit.
Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Respiratory protection** : Gas filter mask must be worn.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Remarks** : Do not use PVC gloves. PVC absorbs acrylics. Do not use natural rubber gloves. Replace damaged gloves.

Advice on personal protection is applicable for high exposure levels. Select proper personal protection based on a risk assessment of the actual exposure situation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Physical state** : Liquid. [Clear.]
- Colour** : Colourless Colourless to light yellow.
- Odour** : typical
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : Not available.
- Flash point** : 100 °C (estimate)
- Flammability (solid, gas)** : Not available.
- Evaporation rate** : Not available.
- Upper/lower flammability or explosive limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 1.12 (Water = 1)
- Density (g/cm³)** : 1.12 g/cm³ (23°C)
- Solubility** : Soluble in the following materials: cold water and hot water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Dynamic (room temperature): 2000 to 3500 mPa·s (2000 to 3500 cP)
Kinematic (room temperature): >17.85 cm²/s (>1785 cSt)
- Explosive properties** : Not available.
- Oxidising properties** : Not available.

9.2 Other information



Remarks : Soluble in the following materials: organic solvents

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
Stable under storage conditions (see section 7).
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Keep away from heat and direct sunlight. Keep away from flames or sparks. May polymerise on exposure to light. During heating, spontaneous polymerisation can occur.
- 10.5 Incompatible materials** : Free radical initiators, peroxides, strongly alkaline and strongly acidic materials or reactive metals. Contact with these could result in uncontrolled exothermic polymerisation.
- 10.6 Hazardous decomposition products** : No specific data.
- Remarks : Keep away from heat and direct sunlight. Keep away from flames or sparks. Keep away from: Free radical initiators, peroxides, strongly alkaline and strongly acidic materials or reactive metals. Contact with these could result in uncontrolled exothermic polymerisation.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	LD50 Dermal	Rabbit	>13 g/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
isodecyl acrylate	LD50 Oral	Rat	>2000 mg/kg	-
	LC0 Inhalation Vapour	Rat - Female	3.33 8 (Maximum achievable concentration.)	8 hours
benzophenone	LD50 Dermal	Rabbit - Male	3140 mg/kg	-
	LD50 Oral	Rat - Female	9486 mg/kg	-
	LD50 Dermal	Rabbit	3535 mg/kg	-
	LD50	Mouse	727 mg/kg	-
2,6-di-tert-butyl-p-cresol	Intraperitoneal	Mouse	2895 mg/kg	-
	LD50 Oral	Rat	>10000 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>6000 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Bufferlite® DU-1002	27777.8	26896.8	N/A	N/A	N/A
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	2500	2500	N/A	N/A	N/A
monoalkyl or monoaryl or monoalkylaryl esters of acrylic acid	9486	3140	N/A	N/A	N/A
benzophenone	N/A	3535	N/A	N/A	N/A
2,6-di-tert-butyl-p-cresol	N/A	2500	N/A	N/A	N/A

Irritation/Corrosion



Product/ingredient name	Result	Species	Score	Exposure	Observation	
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	Skin - Erythema/ Eschar	Rabbit	0.33	4 hours	72 hours	
	Skin - Oedema	Rabbit	0	4 hours	72 hours	
	Eyes - Cornea opacity	Rabbit	1	24 hours 0.1 ml	14 days	
	Eyes - Iris lesion	Rabbit	0.67	24 hours 0.1 ml	14 days	
	Eyes - Oedema of the conjunctivae	Rabbit	2.56	24 hours 0.1 ml	14 days	
	isodecyl acrylate	Skin - Non-irritating	Human	0	0.03 ml	-
		Eyes - Redness of the conjunctivae	Rabbit	0	0.1 ml	24 to 72 hours
		Eyes - Oedema of the conjunctivae	Rabbit	0	0.1 ml	24 to 72 hours
		Eyes - Cornea opacity	Rabbit	0	0.1 ml	24 to 72 hours
	benzophenone	Eyes - Iris lesion	Rabbit	0	0.1 ml	24 to 72 hours
Skin - Non-irritating		Rabbit	0	-	-	
Eyes - Cornea opacity		Rabbit	0	25 mg	24 to 72 hours	
Eyes - Iris lesion		Rabbit	0	25 mg	24 to 72 hours	
2,6-di-tert-butyl-p-cresol	Eyes - Redness of the conjunctivae	Rabbit	0	25 mg	24 to 72 hours	
	Skin - Oedema	Rabbit	0	250 mg	24 to 72 hours	
	Skin - Erythema/ Eschar	Rabbit	0	250 mg	24 to 72 hours	

Conclusion/Summary

Eyes : Not available.

Skin : Not available.

Respiratory : Not available.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	skin	Guinea pig	Sensitising
isodecyl acrylate	skin	Mouse	Sensitising
benzophenone	skin	Guinea pig	Not sensitizing
2,6-di-tert-butyl-p-cresol	skin	Rabbit	Not sensitizing

Conclusion/Summary

Skin : Not available.

Respiratory : Not available.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	-	Experiment: In vitro Subject: Mammalian-Animal	Positive
benzophenone	-	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Metabolic activation: with and without metabolic activation Experiment: In vitro Subject: Mammalian-Animal	Negative
2,6-di-tert-butyl-p-cresol	OECD 474 Mammalian Erythrocyte Micronucleus Test	Metabolic activation: With and without metabolic activation Experiment: In vivo Subject: Mammalian-Animal	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative
	-	Experiment: In vivo Subject: Mammalian-Animal	Negative

Conclusion/Summary : Not available.

**Carcinogenicity**

Product/ingredient name	Result	Species	Dose	Exposure
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	Negative - Dermal - NOAEL	Mouse	-	-

Conclusion/Summary : Not available.

Reproductive toxicity

Product/ingredient name	Maternal	Fertility	Developmental	Species	Dose	Exposure
benzophenone	-	-	-	Rat - Male, Female	Oral: <100 ppm	-
	-	-	-	Rabbit	Oral: 45 mg/kg	-
2,6-di-tert-butyl-p-cresol	Positive	Negative	Negative	Rat - Male, Female	Oral: 100 mg/kg	-
	Positive	Negative	-	Rat - Male, Female	Oral: 500 mg/kg	-

Conclusion/Summary : Not available.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	Negative - Oral	Rat	-	-

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
isodecyl acrylate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
benzophenone	Category 2	Oral	kidneys and liver

Aspiration hazard

Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Potential chronic health effects



Product/ingredient name	Result	Species	Dose	Exposure
Propylidyntrimethanol, ethoxylated, esters with acrylic acid	Chronic NOAEL Oral	Rat - Male, Female	250 mg/kg	-
isodecyl acrylate	Sub-chronic NOAEL Dermal	Rat	25 mg/kg Local effects	16 days; 5 days per week
	Sub-acute NOAEL Oral	Rat - Male, Female	1000 mg/kg /day	-
	Sub-chronic NOAEC Inhalation Vapour	Rat - Male, Female	0.075 mg/l Local effects	90 days; 6 hours per day 5 days per week
	Sub-chronic LOAEC Inhalation Vapour	Rat - Male, Female	0.226 mg/l Local effects	90 days; 6 hours per day 5 days per week
	Sub-chronic NOAEC Inhalation Vapour	Rat - Male, Female	0.226 mg/l Systemic effects:	90 days; 6 hours per day 5 days per week
	Sub-chronic LOAEC Inhalation Vapour	Rat - Male, Female	0.753 mg/l Systemic effects:	90 days; 6 hours per day 5 days per week

Conclusion/Summary : Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Classification

Product/ingredient name	OSHA	IARC	NTP
Benzophenone	-	2B	-

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure	Effects
Propylidyntrimethanol, ethoxylated, esters with acrylic acid	Acute EC50 2.2 mg/l	Algae - Desmodesmus subspicatus	72 hours	(growth rate)
	Acute EC50 70.7 mg/l Fresh water	Daphnia	48 hours	Mobility
	Acute LC50 1.95 mg/l Mortality Fresh water	Fish - Danio rerio	96 hours	-
isodecyl acrylate	Acute EC50 94.9 mg/l Acute ecotoxicity: No adverse effects at concentrations up to water solubility. Fresh water	Algae	72 hours	(growth rate)
	Acute EC50 161 mg/l Acute ecotoxicity: No adverse effects at concentrations up to water solubility. Fresh water	Daphnia	48 hours	Mobility
	Acute LC50 >0.31 mg/l Acute ecotoxicity: No adverse effects at concentrations up to water solubility. Fresh water	Fish	96 hours	Mortality
	Acute EC50 3.5 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	72 hours	(growth rate)
benzophenone	Acute EC50 6.784 mg/l Fresh water	Daphnia	48 hours	-
	Acute LC50 14.75 mg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours	Mortality
	Acute NOEC 1 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	72 hours	(growth rate)
	Acute NOEC 4.47 mg/l Fresh water	Daphnia	48 hours	-
	Chronic EC50 1.1 mg/l Fresh water	Daphnia	21 days	-
	Chronic NOEC 0.2 mg/l Fresh water	Daphnia	21 days	-
	Chronic NOEC 1.03 mg/l Fresh water	Fish - Pimephales promelas - Embryo	32 days	Growth
	Chronic NOEC 5.86 mg/l	Fish - Pimephales promelas - Embryo	7 days	Mortality



2,6-di-tert-butyl-p-cresol	Fresh water Chronic NOEC 2.1 mg/l Fresh water	Fish - Pimephales promelas - Embryo	7 days	(growth rate)
	Acute EC50 0.758 mg/l Fresh water	Algae	96 hours	-
	Acute EC50 >0.4 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Acute EC50 0.48 mg/l Fresh water	Daphnia - Scenedemus subspicatus	48 hours	-
	Acute LC50 0.199 mg/l Fresh water	Fish	96 hours	-
	Acute NOEC 0.15 mg/l Fresh water	Daphnia - Scenedemus subspicatus	48 hours	-
	Chronic NOEC 0.023 mg/l Fresh water	Daphnia - Daphnia magna	21 days	-
	Chronic NOEC 0.053 mg/l Fresh water	Fish - Oryzias latipes	42 days	Reproduction

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Propylidyntrimethanol, ethoxylated, esters with acrylic acid benzophenone	OECD 301B	58 % - Readily - 28 days	-	Activated sludge
	OECD 301F Ready Biodegradability - Manometric Respirometry Test	>65 % - Readily - 14 days	-	Activated sludge
2,6-di-tert-butyl-p-cresol	OECD 301C Ready Biodegradability - Modified MITI Test (I)	4.5 % - Not readily - 28 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Propylidyntrimethanol, ethoxylated, esters with acrylic acid	-	-	Readily
isodecyl acrylate	-	-	Readily
benzophenone	-	-	Readily
2,6-di-tert-butyl-p-cresol	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Propylidyntrimethanol, ethoxylated, esters with acrylic acid	2.89	-	low
isodecyl acrylate	5.55	-	high
benzophenone	3.18	6.3	low
2,6-di-tert-butyl-p-cresol	5.1	330 to 1800	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.



SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. Reference number: 2008/98/EC.

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.



Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol

Ingredient name	Status
Not listed.	

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Informed Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

15.2 Chemical safety assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
<input checked="" type="checkbox"/> Skin Sens. 1, H317 Aquatic Chronic 3, H412	Calculation method Calculation method

Full text of abbreviated H statements

<input checked="" type="checkbox"/> H315 H317 H319 H335 H373 H400 H410 H411 H412	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]



Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2 Aquatic Chronic 3 Eye Irrit. 2 Skin Irrit. 2 Skin Sens. 1 Skin Sens. 1B STOT RE 2 STOT SE 3	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITISATION - Category 1 SKIN SENSITISATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3
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Alterations compared to the previous version : Alterations compared to the previous version are marked with a little (blue) triangle.

Abbreviations and acronyms : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 IATA = International Air Transport Association
 IMDG = International Maritime Dangerous Goods
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Sources of key data : Literature data and/or investigation reports are available through the manufacturer.

Internal code : 015248WW23624

Training advice : Handling of this substance or preparation is restricted to skilled personnel only.

Notice to reader

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.

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