

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

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

1.1 Product identifier

Product name : Tau Ink 2 - Yellow
Trade name : Yellow
 Tau Ink 2
Product code : 1690193
UFI : P993-V4VJ-A00U-CRWQ
Date of issue/Date of revision : 10 January 2026
Version : 2.13

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

Identified uses

Printing ink; Printing ink related material; Colorant

Uses advised against

Not applicable.

1.3 Details of the supplier of the safety data sheet

Manufacturer/ Distributor : Durst Group AG
 Julius-Durst-Straße 4
 39042 Brixen
 Italy
 P.: +39 0472 810111
 F.: +39 0472 830980

e-mail address of person responsible for this SDS : sds@durst-group.com

1.4 Emergency telephone number

Supplier

Telephone number : (44) 20 3807 3798 (Chemtrec - 24 hours)

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 Irrit. 2, H315
 Eye Irrit. 2, H319
 Skin Sens. 1, H317
 Repr. 1B, H360FD
 STOT RE 1, H372
 Aquatic Acute 1, H400
 Aquatic Chronic 2, H411

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

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May damage fertility. May damage the unborn child. Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.
<u>Precautionary statements</u>		
Prevention	:	P280 - Wear protective gloves. Wear eye or face protection. P201 - Obtain special instructions before use. P270 - Do not eat, drink or smoke when using this product.
Response	:	P308 + P313 - IF exposed or concerned: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Disposal	:	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	:	hexamethylene diacrylate (5-ethyl-1,3-dioxan-5-yl)methyl acrylate 1-vinylhexahydro-2H-azepin-2-one phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide propoxylated glycerol triacrylated 2-Phenoxyethyl Acrylate trimethylolpropane triacrylate 2,6-bis(1,1-dimethylethyl)-4-(phenylenemethylene)cyclohexa-2,5-dien-1-one
Supplemental label elements	:	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	Restricted to professional users.
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. This mixture does not contain any substances that are assessed to be endocrine disrupting.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
hexamethylene diacrylate	REACH #: 01-2119484737-22 EC: 235-921-9 CAS: 13048-33-4 Index: 607-109-00-8	50 < 80	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411	[1]
(5-ethyl-1,3-dioxan-5-yl)	REACH #:	10 < 20	Skin Irrit. 2, H315	[1]

SECTION 3: Composition/information on ingredients

methyl acrylate	01-2119976303-36 EC: 266-380-7 CAS: 66492-51-1		Skin Sens. 1B, H317 Aquatic Chronic 2, H411	
1-vinylhexahydro-2H-azepin-2-one	REACH #: 01-2119977109-27 EC: 218-787-6 CAS: 2235-00-9	10 < 20	Acute Tox. 4, H302 Acute Tox. 4, H312 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT RE 1, H372 (liver, respiratory system) (inhalation)	[1]
phenyl bis (2,4,6-trimethylbenzoyl)- phosphine oxide	REACH #: 01-2119489401-38 01-2119936813-33 EC: 423-340-5 CAS: 162881-26-7 Index: 015-189-00-5	3 < 5	Skin Sens. 1A, H317 Aquatic Chronic 4, H413	[1]
diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	REACH #: 01-2119972295-29 EC: 278-355-8 CAS: 75980-60-8	3 < 5	Skin Sens. 1B, H317 Repr. 1B, H360FD (oral)	[1]
Benzene, (1-methylethenyl)- , homopolymer, ar- (2-hydroxy-2-methyl- 1-oxopropyl) derivs.	REACH #: 01-0000015270-82 01-2120016508-60 CAS: 163702-01-0	1,0 < 2,5	Repr. 2, H361f Aquatic Chronic 4, H413	[1]
propoxylated glycerol triacylated	REACH #: 01-2119487948-12 EC: 500-114-5 CAS: 52408-84-1	1,0 < 2,5	Eye Irrit. 2, H319 Skin Sens. 1, H317	[1]
2-Hydroxy-2-Methyl- 1-Phenyl-1-Propanone	REACH #: 01-2119472306-39 EC: 231-272-0 CAS: 7473-98-5	1,0 < 2,5	Acute Tox. 4, H302 Aquatic Chronic 3, H412	[1]
2-Phenoxyethyl Acrylate	REACH #: 01-2119980532-35 EC: 256-360-6 CAS: 48145-04-6	0,25 < 1,0	Skin Sens. 1A, H317 Repr. 2, H361fd (oral) Aquatic Chronic 2, H411	[1]
2,2-bis(acryloyloxymethyl) butyl acrylate	REACH #: 01-2119489896-11 EC: 239-701-3 CAS: 15625-89-5 Index: 607-111-00-9	0,25 < 1,0	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Carc. 2, H351 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
2,6-di-tert-butyl-p-cresol	REACH #: 01-2119480433-40 01-2119555270-46 01-2119565113-46 EC: 204-881-4 CAS: 128-37-0	0,1 < 0,25	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
2,6-bis(1,1-dimethylethyl)-4- (phenylenemethylene) cyclohexa-2,5-dien-1-one	REACH #: 01-2119450089-37 01-2119928020-54 EC: 429-460-4 CAS: 7078-98-0	0,1 < 0,25	Skin Sens. 1, H317 Aquatic Chronic 4, H413	[1]

SECTION 3: Composition/information on ingredients

Index: 606-117-00-9

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

Type

[1] Substance classified with a health or environmental hazard
Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- Eye contact** : Remove contact lenses, if present and easy to do. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. In case of accidental eye contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of the eyes.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners. In case of accidental skin contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of skin.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

Ingestion may cause nausea, weakness and central nervous system effects.

Contains hexamethylene diacrylate, (5-ethyl-1,3-dioxan-5-yl)methyl acrylate, 1-vinylhexahydro-2H-azepin-2-one, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, Glycerol, propoxylated, esters with acrylic acid, 2-phenoxyethyl acrylate, 2,2-bis(acryloyloxymethyl)butyl acrylate, 2,6-bis(1,1-dimethylethyl)-4-(phenylenemethylene)cyclohexa-2,5-dien-1-one. May produce an allergic reaction.

The following products have sensitising properties: hexamethylene diacrylate, (5-ethyl-1,3-dioxan-5-yl)methyl acrylate, 1-vinylhexahydro-2H-azepin-2-one, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, Glycerol, propoxylated, esters with acrylic acid, 2-phenoxyethyl acrylate. Cases of hypersensitivity may occur, possibly with cross-sensitisation to other acrylate materials.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to medical doctor : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

SECTION 4: First aid measures

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous combustion products : Decomposition products may include the following materials:
carbon monoxide
carbon dioxide
smoke
oxides of nitrogen

5.3 Advice for firefighters

Special protective actions for fire-fighters : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.

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 : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up : 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 (see Section 13). Preferably clean with a detergent. Avoid using solvents.

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

Persons with a history of skin sensitization problems should not be employed in any process in which this product is used, without Personal Protective Equipment measures.

7.1 Precautions for safe handling

Protective measures : Use only in well-ventilated areas. Keep container tightly closed. Keep away from heat, sparks and flame. Do not breathe vapour or mist. Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Always keep in containers made from the same material as the original one. Avoid exposure during pregnancy. Put on appropriate personal protective equipment (see Section 8). Never use pressure to empty. Container is not a pressure vessel. Comply with the health and safety at work laws. Avoid release to the environment.

SECTION 7: Handling and storage

- 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: 5 – 35 °C. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition - No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination. Do not reuse container. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E1	100 tonne	200 tonne

7.3 Specific end use(s)

- Recommendations** : For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

- Recommended monitoring procedures** : 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
hexamethylene diacrylate	DNEL	Long term Dermal	2.77 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	24.5 mg/m ³	Workers	Systemic
1-vinylhexahydro-2H-azepin-2-one	DNEL	Long term Inhalation	0.17 mg/m ³	Workers	Local
	DNEL	Long term Dermal	0.7 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	4.9 mg/m ³	Workers	Systemic
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	DNEL	Long term Dermal	3 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Dermal	3.33 mg/kg bw/day	Workers	Systemic
	DNEL	Short term	7.84 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide	DNEL	Inhalation Long term	7.84 mg/m ³	Workers	Systemic
	DNEL	Inhalation Long term Dermal	0.233 mg/ kg bw/day	Workers	Systemic
Benzene, (1-methylethenyl)-, homopolymer, ar-(2-hydroxy-2-methyl-1-oxopropyl) derivs.	DNEL	Long term Inhalation	0.822 mg/ m ³	Workers	Systemic
	DNEL	Long term Dermal	14.8 µg/kg bw/day	Workers	Systemic
Glycerol, propoxylated, esters with acrylic acid	DNEL	Long term Inhalation	52.1 µg/m ³	Workers	Systemic
	DNEL	Long term Dermal	2.1 mg/kg bw/day	Workers	Systemic
2-hydroxy-2-methylpropiophenone	DNEL	Long term Inhalation	7.4 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1 mg/kg bw/day	Workers	Systemic
2-phenoxyethyl acrylate	DNEL	Long term Inhalation	3.5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	3.5 mg/kg bw/day	Workers	Systemic
2,2-bis(acryloyloxymethyl)butyl acrylate	DNEL	Long term Inhalation	12 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	77 mg/m ³	Workers	Local
	DNEL	Long term Dermal	404 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	16.2 mg/m ³	Workers	Systemic
2,6-di-tert-butyl-p-cresol	DNEL	Long term Dermal	0.8 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	17.1 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	404 mg/kg bw/day	Workers	Systemic
2,6-bis(1,1-dimethylethyl)-4-(phenylenemethylene)cyclohexa-2,5-dien-1-one	DNEL	Long term Dermal	0.5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1.76 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	1.75 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation			

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
hexamethylene diacrylate	Fresh water	0.0015 mg/l	-
	Marine water	0.00015 mg/l	-
	Sewage Treatment Plant	2.7 mg/l	-
	Fresh water sediment	0.0243 mg/kg dwt	-
	Marine water sediment	0.00243 mg/kg dwt	-
	Soil	0.00397 mg/kg dwt	-
	1-vinylhexahydro-2H-azepin-2-one	Fresh water	0.1 mg/l
Marine water		0.01 mg/l	-
Sewage Treatment Plant		262 mg/l	-
Fresh water sediment		0.829 mg/kg	-
Marine water sediment		0.0829 mg/kg	-
Soil		0.107 mg/kg	-
Glycerol, propoxylated, esters with acrylic		Fresh water	0.00574 mg/l

SECTION 8: Exposure controls/personal protection

acid	Marine water	0.000574 mg/l	-	
	Sewage Treatment Plant	10 mg/l	-	
	Fresh water sediment	0.01687 mg/kg dwt	-	
	Marine water sediment	0.001687 mg/kg dwt	-	
	Soil	0.00111 mg/kg dwt	-	
	Secondary Poisoning	5.6 mg/kg	-	
	2,2-bis(acryloyloxymethyl)butyl acrylate	Fresh water	0.00147 mg/l	-
		Marine water	0.000147 mg/l	-
		Sewage Treatment Plant	6.25 mg/l	-
		Fresh water sediment	0.0062 mg/kg dwt	-
Marine water sediment		0.00062 mg/kg dwt	-	
Soil		0.0043 mg/kg dwt	-	
Secondary Poisoning		5.6 mg/kg	-	
Sewage Treatment Plant		6.25 mg/l	-	
Fresh water		0.00087 mg/l	-	
Marine water		0.000087 mg/l	-	
2,6-di-tert-butyl-p-cresol	Intermittent release	0.0087 mg/l	-	
	Fresh water sediment	0.017 mg/kg	-	
	Marine water sediment	0.0017 mg/kg	-	
	Soil	0.003 mg/kg	-	
	Secondary Poisoning	10 mg/kg	-	
	Fresh water	4 µg/l	-	
	Marine water	0.4 µg/l	-	
	Sewage Treatment Plant	100 mg/l	-	
	Fresh water sediment	1.29 mg/kg dwt	-	
	Soil	1.04 mg/kg dwt	-	
Secondary Poisoning	16.7 mg/kg	-		

8.2 Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn.

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 : Use safety eyewear designed to protect against splash of liquids. Use eye protection according to EN 166.

Skin protection

Hand protection : Wear suitable gloves tested to EN374. There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

Gloves : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately

SECTION 8: Exposure controls/personal protection

estimated.

"RadTech recommend use of:

-single use: disposable, unpowdered, nitrile gloves: Use for short duration exposures not exceeding 30 minutes, in situations where only splashes are likely. Do not use where mechanical resistance is required or where puncturing or tearing of the gloves is likely to occur. Replace immediately if punctured, degraded or tearing of the gloves has occurred.

-general use: minimum 0.45mm thick, unlined, unpowdered, natural rubber latex-free nitrile gloves: Use for longer duration exposure (up to 4 hours for most UV/EB curing acrylates) or mechanical handling activities. Replace immediately when punctured or when a change of appearance (colour, elasticity, shape) occurs

- heavy duty: unlined, natural rubber latex-free nitrile gloves: Use when handling solvents. Avoid the use of chlorinated solvents and limit the use of ketones (e.g. acetone, MEK, MIBK) and ethyl and butyl acetates, as they may accelerate glove deterioration."

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection	: Personnel should wear protective clothing.
Other skin protection	: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
Environmental exposure controls	: Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Liquid.
Colour	: Yellow.
Odour	: Characteristic.
Melting point/freezing point	: Not applicable.
Initial boiling point and boiling range	: Lowest known value: 220°C (431°F)
Flammability	: Not flammable.
Lower and upper explosion limit	: Not available.
Flash point	: Closed cup: 96°C (204.8°F)
Auto-ignition temperature	: 220°C (428°F) (1-vinylhexahydro-2H-azepin-2-one (2235-00-9))
Decomposition temperature	: Not applicable.
pH	: Product is non-polar/aprotic.
Viscosity	: Not tested
Solubility(ies)	: Not available.
Solubility in water (g/l)	: Not available.

SECTION 9: Physical and chemical properties

Partition coefficient: n-octanol/ water	: Not applicable.
Vapour pressure	: 0.00006 kPa (0.00045 mm Hg) (hexamethylene diacrylate (13048-33-4))
Evaporation rate	: <1 (2-Hydroxy-2-Methyl-1-Phenyl-1-Propanone) compared with butyl acetate
Relative density	: Not tested
Density	: Approx. 1.13 g/cm ³
Vapour density	: >1 [Air = 1]
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.
9.2 Other information	
VOC content	: 0%

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	: Hazardous reactions or instability may occur under certain conditions of storage or use.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: This mixture contains materials which are unstable under the following conditions: exposure to heat, strong UV sources. These could cause the product to polymerise exothermically. Unintentional contact with them should be avoided.
10.5 Incompatible materials	: Keep away from: free radical initiators, peroxides, strong alkalis, reactive metals.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerisation	: May polymerise on exposure to sunlight.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

Ingestion may cause nausea, weakness and central nervous system effects.

Contains hexamethylene diacrylate, (5-ethyl-1,3-dioxan-5-yl)methyl acrylate, 1-vinylhexahydro-2H-azepin-2-one, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, Glycerol, propoxylated, esters with acrylic acid, 2-phenoxyethyl acrylate, 2,2-bis(acryloyloxymethyl)butyl acrylate, 2,6-bis(1,1-dimethylethyl)-4-(phenylenemethylene)cyclohexa-2,5-dien-1-one. May produce an allergic reaction.

The following products have sensitising properties: hexamethylene diacrylate, (5-ethyl-1,3-dioxan-5-yl)methyl acrylate, 1-vinylhexahydro-2H-azepin-2-one, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, Glycerol, propoxylated, esters with acrylic acid, 2-phenoxyethyl acrylate. Cases of hypersensitivity may occur, possibly with cross-sensitisation to other acrylate materials.

Acute toxicity

Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure.

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
hexamethylene diacrylate (13048-33-4)	LD50 Oral	Rat	5 g/kg	-
1-vinylhexahydro-2H-azepin-2-one	LD50 Dermal	Rat	>2000 mg/kg	-
2-hydroxy-2-methylpropiophenone	LD50 Oral	Rat	1400 mg/kg	-
	LD50 Dermal	Rat	6929 mg/kg	-
2,2-bis(acryloyloxymethyl)butyl acrylate (15625-89-5)	LD50 Oral	Rat	1694 mg/kg	-
	LD50 Dermal	Rabbit	5170 mg/kg	-

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

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)
Calculated value for the mixture	11050.8	9301.7	N/A	N/A	N/A
hexamethylene diacrylate (13048-33-4)	5000	N/A	N/A	N/A	N/A
1-vinylhexahydro-2H-azepin-2-one	1400	1100	N/A	N/A	N/A
2-hydroxy-2-methylpropiophenone	1694	6929	N/A	N/A	N/A
2,2-bis(acryloyloxymethyl)butyl acrylate (15625-89-5)	N/A	5170	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Exposure	Observation
hexamethylene diacrylate (13048-33-4)	Skin - Severe irritant	Rabbit	- 24 hours 500 mg	-

Skin : The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Eyes : The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Respiratory : The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Sensitisation

Skin : The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Respiratory : The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Mutagenicity

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Carcinogenicity

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Reproductive toxicity

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Teratogenicity

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
1-vinylhexahydro-2H-azepin-2-one	Category 1	inhalation	liver, respiratory system

Aspiration hazard

Not available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

12.2 Persistence and degradability

The product has not been tested. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
hexamethylene diacrylate	2.81	-	Low
phenyl bis (2,4,6-trimethylbenzoyl)- phosphine oxide	5.77	-	High
diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	-	53 to 72	Low
Glycerol, propoxylated, esters with acrylic acid	2.52	-	Low
2-hydroxy- 2-methylpropiophenone	1.62	-	Low
2,2-bis(acryloyloxymethyl) butyl acrylate	0.67	-	Low
2,6-di-tert-butyl-p-cresol	5.1	-	High
2,6-bis(1,1-dimethylethyl)-4- (phenylenemethylene) cyclohexa-2,5-dien-1-one	>6	-	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 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

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.

Disposal considerations : Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

European waste catalogue (EWC) (2008/98/EC)

Waste code	Waste designation
08 03 12*	waste ink containing hazardous substances

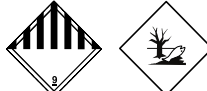
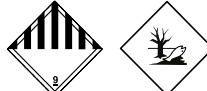
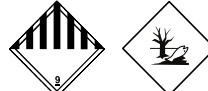

Packaging

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.

Disposal considerations : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

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 or ID number	UN3082	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene diacrylate; (5-ethyl-1,3-dioxan-5-yl)methyl acrylate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene diacrylate; (5-ethyl-1,3-dioxan-5-yl)methyl acrylate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene diacrylate; (5-ethyl-1,3-dioxan-5-yl)methyl acrylate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene diacrylate; (5-ethyl-1,3-dioxan-5-yl)methyl acrylate)
14.3 Transport hazard class(es)	9 	9 	9 	9 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes.

Additional information

SECTION 14: Transport information

ADR/RID	: This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
ADN	: This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
IMDG	: This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
IATA	: This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
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 Maritime transport in bulk according to IMO instruments	: Not available.

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

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Toxic to reproduction	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Candidate	-	6/14/2023

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Annex XVII Listed substances

Designation	Ingredient name
27	Nickel, 5,5'-azobis-2,4,6(1H,3H,5H)-pyrimidinetrione complexes

Other EU regulations

VOC content : 0%

Ozone depleting substances (2024/590/EU)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

National regulations

SECTION 15: Regulatory information

Industrial use : The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

CEPE code : 4

☑ Indicates information that has changed from previously issued version.

Abbreviations and acronyms : 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
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Key literature references and sources for data : <https://echa.europa.eu/information-on-chemicals>
<https://echa.europa.eu/information-on-chemicals/registered-substances>
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0878&rid=1>
 FDS do fornecedor

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

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 1B, H360FD	Calculation method
STOT RE 1, H372	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H360FD	May damage fertility. May damage the unborn child.
H361f	Suspected of damaging fertility.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Full text of classifications [CLP/GHS]

SECTION 16: Other information

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Aquatic Chronic 4	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4
Carc. 2	CARCINOGENICITY - Category 2
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1

Training advice : Not available.

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Version : 2.13

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.

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