

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - Europe

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

1.1 Product identifier

Product name : Tau Ink - Black
Product code : 1690012

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

Identified uses

Printing ink. Printing ink related material

Uses advised against	Reason
Not applicable.	

1.3 Details of the supplier of the safety data sheet

Manufacturer/ Distributor

Durst Phototechnik AG
Vittorio Veneto Str. 59
I-39042 Brixen
Italy
tel. 0039,0472,810111
fax.0039,0472,830980

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xi; R41, R38
R43
R52/53

Human health hazards : Risk of serious damage to eyes. Irritating to skin. May cause sensitization by skin contact.

Environmental hazards : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R-phrases declared above.

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

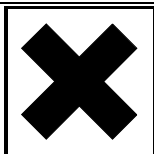
2.2 Label elements

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SECTION 2: Hazards identification

Hazard symbol or symbols :



Indication of danger : Irritant

Risk phrases : R41- Risk of serious damage to eyes.
R38- Irritating to skin.
R43- May cause sensitization by skin contact.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S24- Avoid contact with skin.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39- Wear suitable gloves and eye/face protection.

Hazardous ingredients : hexamethylene diacrylate
oxybis(methyl-2,1-ethanediyl) diacrylate
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide
(5-ethyl-1,3-dioxan-5-yl)methyl acrylate

Supplemental label elements : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : Not available.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
hexamethylene diacrylate	EC: 235-921-9 CAS: 13048-33-4 Index: 607-109-00-8	25 - 40	Xi; R36/38 R43	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317	[1]
oxybis(methyl-2,1-ethanediyl) diacrylate	EC: 260-754-3 CAS: 57472-68-1	10 - 25	Xi; R41, R38 R43	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317	[1]
1-vinylhexahydro-2H-azepin-2-one	EC: 218-787-6 CAS: 2235-00-9	10 - 25	Xn; R22 Xi; R36	Acute Tox. 4, H302 Eye Irrit. 2, H319	[1]
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	EC: 423-340-5 CAS: 162881-26-7 Index: 015-189-00-5	5 - 10	R43 R53	Skin Sens. 1, H317 Aquatic Chronic 4, H413	[1]
substituted phosphine oxide	EC: 278-355-8 CAS: 75980-60-8	2.5 - 5	Repr. Cat. 3; R62 N; R51/53	Repr. 2, H361f Aquatic Chronic 3, H412	[1]
(5-ethyl-1,3-dioxan-5-yl)methyl acrylate	EC: 266-380-7 CAS: 66492-51-1	2.5 - 5	Xi; R38 R43	Skin Irrit. 2, H315 Skin Sens. 1, H317	[1]
hydroxy aryl ketone 1817	EC: 231-272-0 CAS: 7473-98-5 Index: 13000040A	1 - 2.5	Xn; R22	Acute Tox. 4, H302	[1]
monoalkyl or monoaryl or monoalkylaryl esters of acrylic acid	EC: 221-351-8 CAS: 3076-04-8 Index: 607-133-00-9	< 1	Xi; R36/37/38 N; R51/53	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 2, H411	[1]

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SECTION 3: Composition/information on ingredients

See Section 16 for the full text of the R-phrases declared above.

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.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

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** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. 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 recognized 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 this 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. 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

There are no data available on the preparation itself. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. 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 preparation 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, oxybis(methyl-2,1-ethanediyl) diacrylate, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, (5-ethyl-1,3-dioxan-5-yl)methyl acrylate, PROPOXYLATED GLYCEROL TRIACRYLATE, trimethylolpropane triacrylate. May produce an allergic reaction.

The following products have sensitizing properties: hexamethylene diacrylate, oxybis(methyl-2,1-ethanediyl) diacrylate, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, (5-ethyl-1,3-dioxan-5-yl)methyl acrylate, PROPOXYLATED

SECTION 4: First aid measures

GLYCEROL TRIACRYLATE, trimethylolpropane triacrylate. Cases of hypersensitivity may occur, possibly with cross-sensitization 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 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 thermal decomposition 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 vapor 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 Section 8 for additional information on hygiene measures.

- 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 materials 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.

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 : Use only in well-ventilated areas.
Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this preparation. Keep container tightly closed. Keep away from heat, sparks and flame.
Always keep in containers made from the same material as the original one.
Put on appropriate personal protective equipment (see Section 8).
Never use pressure to empty. Container is not a pressure vessel.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Comply with the health and safety at work laws.

7.2 Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 5 - 35 °C
Store in accordance with local regulations.
Notes on joint storage
Keep away from: oxidizing agents, strong alkalis, strong acids.
Additional information on storage conditions
Observe label precautions. 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 unauthorized access.
Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep only in the original container.

7.3 Specific end use(s)
Recommendations : Not available.
Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

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 vapors 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.

SECTION 8: Exposure controls/personal protection

Eye/face protection	: Use safety eyewear designed to protect against splash of liquids.
Skin protection	
Hand protection	: Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.
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.
Gloves	: "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."
Body protection	: Personnel should wear protective clothing.
Respiratory protection	: In situations where misting or flying may occur, use appropriate certified respirators.
Environmental exposure controls	: Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Liquid.
Color	: Black.
Odor	: Not available.
Odor threshold	: Not available.
Melting point/freezing point	: Not available.
Flash point	: 96°C
VOC	: Not applicable.
pH	: Not available.
Boiling point	: Lowest known value: 227°C (441°F)
Evaporation rate	: Not available.
Upper/lower flammability or explosive limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: Not available.
Solubility(ies)	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
Explosive properties	: Not available.
Oxidizing properties	: Not available.

SECTION 9: Physical and chemical properties

9.2 Other information

No additional information.

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 preparation contains materials which are unstable under the following conditions: exposure to heat, strong UV sources. These could cause the product to polymerize 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.

SECTION 11: Toxicological information

There are no data available on the preparation itself. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. 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 preparation 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.

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11.1 Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not determined - Classification according to Directive 1999/45/EC [DPD]

Sensitization

Not determined - Classification according to Directive 1999/45/EC [DPD]

Mutagenicity

SECTION 11: Toxicological information

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

SECTION 12: Ecological information

There are no data available on the preparation itself.
Do not allow to enter drains or watercourses.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is classified for eco-toxicological properties accordingly. See sections 3 and 15 for details.

12.1 Toxicity

Not available.

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

Do not allow to enter drains or watercourses.

Dispose of according to all federal, state and local applicable regulations.

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

Packaging

SECTION 13: Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- European Waste Catalogue (EWC):** 08 03 12
- 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

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

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 Annex II of MARPOL 73/78 and the IBC Code : 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 authorization

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

Other EU regulations

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SECTION 15: Regulatory information

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
substituted phosphine oxide	-	-	-	Repr. Cat. 3; R62

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 : This product contains substances for which Chemical Safety Assessments are still to be received.

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]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Full text of abbreviated H statements : H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H361f Suspected of damaging fertility.
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] : Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2
Aquatic Chronic 3, H412 AQUATIC TOXICITY (CHRONIC) - Category 3
Aquatic Chronic 4, H413 AQUATIC TOXICITY (CHRONIC) - Category 4
Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Repr. 2, H361f TOXIC TO REPRODUCTION [Fertility] - Category 2
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1
STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3

Full text of abbreviated R phrases : R62- Possible risk of impaired fertility.
R22- Harmful if swallowed.
R41- Risk of serious damage to eyes.
R36- Irritating to eyes.
R38- Irritating to skin.
R36/38- Irritating to eyes and skin.
R36/37/38- Irritating to eyes, respiratory system and skin.
R43- May cause sensitization by skin contact.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53- May cause long-term adverse effects in the aquatic environment.

SECTION 16: Other information

Full text of classifications [DSD/DPD] : Repr. Cat. 3 - Toxic to reproduction category 3
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

Date of printing : 1/21/2013.

Date of issue/ Date of revision : 9/30/2011.

Date of previous issue : No previous validation.

Version : 0.04

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 fulfill 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.

Annex