



1 Identification

- **Product identifier**
- **Trade name:**
- **Article number:** UV Formulation
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:"**

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

H227 Combustible liquid.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS07
- **Signal word** Warning
- **Hazard-determining components of labeling:**
 - Urethane Acrylate
 - Isobornyl Acrylate Esters
- **Hazard statements**
 - Combustible liquid.
 - Causes skin irritation.
 - Causes serious eye irritation.
 - May cause an allergic skin reaction.
 - May cause respiratory irritation.
- **Precautionary statements**
 - If medical advice is needed, have product container or label at hand.
 - Keep out of reach of children.
 - Read label before use.
 - Keep away from flames and hot surfaces. – No smoking.
 - Avoid breathing dust/fume/gas/mist/vapors/spray
 - Wear protective gloves / eye protection / face protection.
 - Wear protective gloves.
 - Wear eye protection / face protection.

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Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a poison center/doctor if you feel unwell.

Wash contaminated clothing before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO₂, powder or water spray.

If on skin: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 1

Reactivity = 2

· **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 1

Reactivity = 2

· **Other hazards**

ROUTES OF EXPOSURE

INHALATION: No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

EYE CONTACT (PRIMARY ROUTE): Although no appropriate human or animal health effects data are known to exist, this material is expected to cause eye irritation. May cause moderate irritation with symptoms including burning sensation, tearing, redness or swelling.

SKIN ABSORPTION (PRIMARY ROUTE): Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight skin absorption hazard.

SKIN IRRITATION (PRIMARY ROUTE): Although no appropriate human or animal health effects data are known to exist, this material is expected to be a skin irritant. Symptoms may include localized redness or rash and swelling of the affected area. Symptoms may be delayed. A more severe skin response may occur after prolonged contact with this material.

Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

INGESTION: Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight ingestion hazard.

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MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: This material or its emissions may induce an allergic or sensitization reaction and thereby aggravate systemic disease.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

	Urethane Acrylate	50-100%
5888-33-5	Isobornyl Acrylate Esters	10-25%
947-19-3	1-Hydroxycyclohexyl phenyl ketone	≤ 2.5%
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)-phosphine oxide	≤ 2.5%

· **Additional information:**

WARNING! This is a light sensitive product polymerized by exposure to UV Light. Do not expose to Ultraviolet Light/Radiation, Direct Sunlight, High temperatures, and oxidizing agents.

High temperatures, exposure to light, radiation exposure, inhibitor depletion, accidental impurities, inert gas blanketing, and oxidizing agents may cause spontaneous polymerization reaction. Polymerization in large masses may cause excess exothermic reaction generating heat and also pressure. Closed containers may rupture or explode during runaway polymerization.

Summary of Hazards

WARNING

PHYSICAL HAZARDS: Unstable (reactive) upon depletion of inhibitor

ACUTE HEALTH EFFECTS: Suspect eye irritation hazard, (SHORT-TERM) Suspect skin irritation hazard, Suspect skin sensitization hazard, Suspect respiratory tract irritation hazard, Suspect slight skin absorption hazard.

Suspect slight ingestion hazard

CHRONIC HEALTH EFFECTS (LONG-TERM): No chronic health effects information is known to exist for this product or either component.

4 First-aid measures

· **Description of first aid measures**

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

· **After skin contact:**

Immediately remove contaminated clothing. Wash skin thoroughly with mild soap/water. Flush w/lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

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· After eye contact:

In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention.

· After swallowing:

If large quantity swallowed, give lukewarm water (pint) if victim is completely conscious/alert. Do not induce vomiting/risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.

· Most important symptoms and effects, both acute and delayed *No further relevant information available.***· Information for doctor:** *Treat symptomatically.***· Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

Suitable extinguishing agents: Dry chemical, CO₂, Foam. Use water spray/water fog for cooling.

· Special hazards arising from the substance or mixture

High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during runaway polymerization.

· Advice for firefighters**· Protective equipment:**

Do not enter fire area without proper protection. See Section 10 - decomposition products possible. Fight fire from safe distance/protected location. Heat/impurities may increase temperature/build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling. Pressure relief system may plug with solids, increasing risk of overpressure. Notify authorities if liquid enters sewer/public waters.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Spilled or released material may polymerize and release heat/gases.

Extinguish all ignition sources and ventilate area. Wear protective equipment during clean-up.

· Environmental precautions: *Do not allow to enter sewers/ surface or ground water.***· Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Dike and recover large spill. Soak up small spill with inert solids (such as vermiculite, clay) and sweep/shovel into vented disposal container. Wash spill area with a strong detergent and water solution; rinse with water but minimize water use during clean-up. For spills on water, contain, minimize dispersion and collect. Dispose/report per regulatory requirements.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

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Prevent formation of aerosols.

Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Do not use localized heat sources such as ovens or band heaters to heat product. Exposing this product to elevated temperatures may compromise the product quality and/or result in an uncontrolled hazardous polymerization. Product is packaged with inhibitor(s). The product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas, as it renders inhibitor ineffective.

- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 - Store in dark area away from light.*
 - Store at temperatures between 25 C - 35 C.*
 - Stoor indoors. DO NOT EXPOSE TO OXYGEN-FREE GAS.*
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**
 - If handling results in aerosol or vapor generation, local exhaust ventilation is recommended.*
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
 - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.*
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.*
 - Immediately remove all soiled and contaminated clothing.*
 - Wash hands before breaks and at the end of work.*
 - Avoid contact with the eyes and skin.*
 - Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.*
- Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.*
- **Breathing equipment:**
 - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*
 - If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.*
- **Protection of hands:**



Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	275 °C (527 °F)

· **Flash point:** 93 °C (199 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 390 °C (734 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· **Vapor pressure at 20 °C (68 °F):** 0.2 hPa

· **Density:** Not determined.

· **Relative density** Not determined.

· **Vapour density** Not determined.

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· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Conditions And Materials To Avoid: High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing; Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers.
- **Possibility of hazardous reactions**
Hazardous polymerization may occur if exposed to elevated temperatures. High temperatures, exposure to light, radiation exposure, inhibitor depletion, accidental impurities, inert gas blanketing, and oxidizing agents may cause spontaneous polymerization reaction. Polymerization in large masses may cause excess exothermic reaction generating heat and also pressure. Closed containers may rupture or explode during runaway polymerization.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** See above
- **Hazardous decomposition products:**
Acrid smoke-fumes/carbon monoxide/carbon dioxide/nitrogen oxides and perhaps other toxic vapors may be released during a fire involving this product.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.
- **NTP (National Toxicology Program)**
None of the ingredients is listed.

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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.
WASTE DISPOSAL METHODS: Non-contaminated, properly inhibited product is not a RCRA hazardous waste. However, contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for internal heat generation (see 40 CFR 261 and 29 CFR 1910). It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste. Comply with all applicable federal, state and local regulations. Use registered transporters. Disposal options include landfilling solids at permitted sites; fuel blending or incinerating liquids. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade; avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

14 Transport information

- | | |
|-------------------------------------|----------------|
| · UN-Number | |
| · DOT, ADR, ADN, IMDG, IATA | Not Applicable |
| · UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | Not Applicable |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | Not Applicable |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Not Applicable |

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- | | |
|--|-----------------|
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · DOT | |
| · Remarks: | Not Regulated |
| · ADR | |
| · Remarks: | Not Regulated |
| · IMDG | |
| · Remarks: | Not Regulated |
| · IATA | |
| · Remarks: | Not Regulated |
| · UN "Model Regulation": | - |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· Section 355 (extremely hazardous substances):
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None of the ingredient is listed.

· Section 313 (Specific toxic chemical listings):
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None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

12645-31-7	Phosphoric acid, 2-ethylhexyl ester
5888-33-5	Isobornyl Acrylate Esters
947-19-3	1-Hydroxycyclohexyl phenyl ketone
7473-98-5	2-hydroxy-2-methylpropiophenone
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)-phosphine oxide

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
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None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
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None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

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- **Cancerogenity categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms** GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**

Urethane Acrylate

Isobornyl Acrylate Esters

- **Hazard statements**

Combustible liquid.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause respiratory irritation.

- **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Keep away from flames and hot surfaces. – No smoking.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves / eye protection / face protection.

Wear protective gloves.

Wear eye protection / face protection.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a poison center/doctor if you feel unwell.

Wash contaminated clothing before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO₂, powder or water spray.

If on skin: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The information given

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and the recommendations made herein apply to our product alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

· **Date of preparation / last revision 01/30/2016**

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

: Flammable liquids, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

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