

Safety Data Sheet

Report Date 5/6/2021

Last Edit 5/6/2021

Section 1 - Product Information

3D Resin Solutions
1610 Shanahan Drive
South Elgin, IL 60177

Company Phone (non emergency) (800) 254-0171

American Association of Poison Control Centers:
(800) 222-1222

Product Id # FAST+, HARD, Standard V2
Trade Name 3DRS
Product Class Liquid Plastic
Product Description DLP/LCD 3D Printing Resin

HMIS Rating

Health 2
Flammability 1
Reactivity 0
Personal Protection B

Section 2 - Hazardous Identification



Signal Word Warning

Eye Damage/Irritation - Category 2A
Long Term Hazardous to the Aquatic Environment - Category 3
Skin Corrosion/Irritation - Category 2
Skin Sensitization - Category 1
STOT-SE - Category 3
Toxic to Reproduction - Category 2

Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.
Harmful to aquatic life with long lasting effects.

IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing. And wash it before reuse. Store in a well-ventilated place. Keep container tightly closed. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing fumes and vapours. Wash effected areas thoroughly after handling. Use in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves and eye protection. Call a Doctor if you feel unwell. See section (4) of the SDS for first aid instruction. Store in a closed container. Store locked up. Dispose of contents/container in accordance with local regulations.

Section 3 - Composition/Information on Ingredients

Chemical Name	CAS #	%	PEL	TLV
Acrylated Epoxy, Methacrylates, and/or acrylated Oligomers	Trade Secret	20-60%	N/A	N/A
Diphenyl(2,4,6-trimethylbenzoyl)phosphinoxid	75980-60-8	1-5 %	N/A	N/A
5-ethyl-1,3-dioxan-5-yl)methyl acrylate	66492-51-1	1-20%	n/a	n/a
Aliphatic Urethane Dimethacrylate	n/a	1-20%	n/a	n/a

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Monomer Diluent Trade Secret 10-60% n/a n/a

Section 4 - First aid measures

4.1: Description of first aid measures

Immediately remove any clothing soiled by the product. Involve doctor immediately

4.2: After Inhalation

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stable in side position for transportation.

In the case of accidental inhalation of monomers, provide fresh air, rest and warmth.

4.3: After Skin Contact

Immediately wash with water and soap and rinse thoroughly.

Avoid contact with UV – and sunlight.

4.4: After eye Contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

4.5: After Swallowing

Call a doctor immediately. Rinse out mouth and then drink plenty of water

Section 5 - Fire Fighting Measures

5.1: Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

5.2: For safety reasons unsuitable extinguishing agents:

Water with full jet: Special hazards arising from the substance or mixture

5.3 Advice for fire fighters Protective equipment.

Wear self-contained respiratory protective device. Wear fully protective suit.

Section 6 - Accidental Release Measures

6.1: Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation

Keep people at a distance and stay upwind

6.2: Environmental precautions

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

6.3: Methods and material for containment and cleaning up

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

Section 7 - Handling and storage

7.1: Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care

7.2: Information about protection against explosions and fires

Keep ignition sources away – Do not smoke.

Protect from heat.

7.3: Conditions for safe storage

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Store receptacle in a well ventilated area.

Store under lock and key or with access restricted to technical experts or their assistants only. Do not expose to temperatures above 40 degrees Celsius

Section 8 - Personal Protection**8.1: Personal Protective and Hygienic measures**

The usual precautionary measure for handling chemicals should be followed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work

8.2: 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.

Use suitable respiratory protective device only when aerosol or mist is formed

8.3: Protection of Hands:

Wear protective gloves suitable for skin protection.

8.4: Eye protection

tightly sealed goggles are recommended

8.5: Body protection:

Impervious protective clothing

Section 9 - Physical and chemical properties.**9.1 General Properties**

Boiling Point: > 200°C

Vapor Pressure: (MM HG at 25°C) < 1

Appearance: Viscous solution

Odor: Mild acrylate odor.

Solubility in water: Insoluble.

WPG: 9.00

Evaporation Rate (n-Butyl Acetate = 1) < 1

Vapor Density (air = 1) > 1

Section 10 - Stability and Reactivity**10.1: Stability and Reactivity**

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Polymerization occurs when exposed to white light, ultraviolet light or heat.

Mixtures may separate over time, mixture maintenance may be required.

10.2 Incompatible materials

Avoid contact with radical forming initiators, peroxides, strong alkalis or reactive metals to prevent exothermic polymerization.

Section 11 - Toxicological Information

The toxicological information below is listed from the individual raw ingredients in this mixture. They are not representative of the mixture as a whole. This mixture has not been tested for toxicological effects.

CAS# 42978-66-5

Acute Toxicity:

Oral: LD50: >5000 mg/kg (rat)

Dermal LD50: >3000 mg/kg (rabbit) Literature

Irritation of skin: Skin Irr OECD 404: 1.8 PII 0-8 (rabbit)

· Information on toxicological effects

Available data are listed below; for endpoints not addressed in section 11, no data are available.

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

Aliphatic urethane dimethacrylate

Oral LD50 > 5000 mg/kg (rat)

literature

· Primary irritant effect:

· on the skin: No irritant effect.

· on the eye: No irritating effect.

· Sensitization: No sensitizing effects known.

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· Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The substance is not subject to classification.

- Carcinogenic categories
- IARC (International Agency for Research on Cancer) Substance is not listed.
- NTP (National Toxicology Program) Substance is not listed.

· Information on toxicological effects

Available data are listed below; for endpoints not addressed in section 11, no data are available.

· Acute toxicity:

· Primary irritant effect:

CAS: 66492-51-1 (5-ethyl-1,3-dioxan-5-yl)methyl acrylate

Irritation of skin OECD 404 Skin irritation (rabbit)

irritating

· on the skin: Irritant to skin and mucous membranes.

· on the eye: No irritating effect.

· Sensitization:

Sensitization possible through skin contact.

CAS: 66492-51-1 (5-ethyl-1,3-dioxan-5-yl)methyl acrylate

Dermal OECD 429 (LLNA) skin sensitization (mouse)

sensitizing

· Additional toxicological information:

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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Information on toxicological effects

Available data are listed below; for endpoints not addressed in section 11, no data are available.

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

CAS: 75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

Oral LD50 > 5000 mg/kg (rat)

Dermal LD50 > 2000 mg/kg (rat) (OECD 402)

· Primary irritant effect:

CAS: 75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

Irritation of skin OECD 404 Skin irritation (rabbit)

nicht reizend

Irritation of eyes OECD 405 Eye irritation (rabbit)

nicht reizend

· on the skin: No irritant effect.

· on the eye: No irritating effect.

· Sensitization:

CAS: 75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

Dermal OECD 429 (LLNA) skin sensitization pos (pos/neg) (mouse) sensitizer cat 1B

· Subacute to chronic toxicity:

CAS: 75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

reproductive toxicity (rat) (28d/90d repeated dose toxicity)

Assessment of reproduction toxicity: The results of the animal studies suggest

a fertility impairing effect

· Additional toxicological information:

· Carcinogenic categories

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

Carcinogenicity – Titanium dioxide – dry(respirable)

In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m³ of respirable TiO₂.

Slight lung fibrosis was observed at 50 and 250 mg/m³ levels. Microscopic lung tumors were also observed in 13 percent of the rats exposed to 250 mg/m³, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms. In further studies, these tumors were found to occur only under particle overload

conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO₂ particles exposure was also found to be much more severe in rats than in other rodent species. In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumors, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence. The conclusions of several epidemiology studies on more than 20000 TiO₂ industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO₂ dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO₂ dust. Based upon all available study results, our titanium manufacturer's scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace

Section 12 - Ecological Information

12.1: Ecological Information

Water hazard class 2 (Self-assessment): Hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic to aquatic organisms

Section 13 - Disposal

13.1: Disposal

Can be incinerated, when in compliance with local regulations.
Disposal must be made according to official regulations.

Section 14 - Transportation Information

14.1: Transportation Information

ADR/RID Class - Not registered
ADNR Class - Not registered
IMDG Class - Not registered
IATA Class - Not registered

Section 15 - Regulatory Substances

R100 - Section 355 (Extremely hazardous Substances):

To the best of our knowledge, this product does not contain any products listed in reportable Levels.

R101 - Section 313 (Specific toxic chemical listings)

To the best of our knowledge, this product does not contain any products listed in reportable Levels.

R102 - TSCA (Toxic Substances Control Act)

4-Methoxyphenol; heptane; Acrylated Oligomer
Substance is Listed: CAS# 42978-66-5

R103 - Proposition 65: Chemicals Known to cause Cancer

To the best of our knowledge, this product does not contain any products listed in reportable levels.

R104 - Proposition 65: Chemicals known to cause reproductive harm

Toluene less than 0.01%

R105 - REACH: (SVHC) Substances of Very High Concern:

To the best of our knowledge, this product does not contain any products listed in reportable Levels.

Section 16 - Other Information

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16.2 Other Information

The data are based on the current state of our knowledge, and are intended to describe the product with regard to the requirements of safety. The data should not be taken to imply any guarantee of a particular or general specification. It is the responsibility of the user of the product to ensure to his satisfaction that the product is suitable for the intended purpose and method to use. We do not accept responsibility for any harm caused by the use of this information. Furthermore nothing contained herein shall be construed as recommendation to use any product in conflict with existing patents covering any material or its use. In all cases, our general conditions of sale apply.

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