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1. Identification

Product identifier used on the label

Phrozen Ceramic White Resin

Recommended use of the chemical and restriction on use

Recommended use*: Stereolithography; Monomer in ultraviolet ink jet application; In an enclosed system

Unsuitable for use: Any other use is not compliant.

Details of the supplier of the safety data sheet

Company: BASF CORPORATION 100 Park Avenue Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family: Blend based on: acrylic resin, additives

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Skin Corr./Irrit.	2	Skin corrosion/irritation
SKID COH /IIIII	/	Skin conosion/imianon

Eye Dam./Irrit. 1 Serious eye damage/eye irritation

Skin Sens. 1 Skin sensitization

Aquatic Acute 2 Hazardous to the aquatic environment - acute

^{*} The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

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Aquatic Chronic 3 Hazardous to the aquatic environment - chronic

Repr. 1B (fertility) Reproductive toxicity Repr. 1B (unborn child) Reproductive toxicity

STOT RE 2 Specific target organ toxicity — repeated

exposure

Label elements

Pictogram:



Signal Word: Danger

Hazard Statement:

H318 Causes serious eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H373 May cause damage to organs through prolonged or repeated exposure.

H360 May damage fertility. May damage the unborn child. H412 Harmful to aquatic life with long lasting effects.

H401 Toxic to aquatic life.

Precautionary Statements (Prevention):

P280 Wear protective gloves, protective clothing and eye protection or face

protection.

P260 Do not breathe dust/gas/mist/vapours.
P273 Avoid release to the environment.
P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and

understood.

P272 Contaminated work clothing should not be allowed out of the workplace.

P264 Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or physician.
P308 + P313 IF exposed or concerned: Get medical attention.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):
P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents/container in accordance with local regulations.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

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Labeling of special preparations (GHS):

Product contains the following components and may cause an allergic skin reaction: diphenyl(2,4,6,-trimethylbenzoyl)phosphine oxide

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Silicon dioxide

CAS Number: 7631-86-9

Content (W/W): >= 25.0 - < 50.0%

Synonym: Siliciumdioxid

Proprietary acrylate

CAS Number: Trade Secret Content (W/W): >= 10.0 - < 15.0% Synonym: No data available.

Acrylate derivative

CAS Number: Trade Secret Content (W/W): >= 10.0 - < 15.0% Synonym: No data available.

2-Propen-1-one, 1-(4-morpholinyl)-

CAS Number: 5117-12-4

Content (W/W): >= 7.0 - < 10.0% Synonym: No data available.

Acrylate ester

CAS Number: Trade Secret Content (W/W): >= 3.0 - < 5.0% Synonym: No data available.

diphenyl(2,4,6,-trimethylbenzoyl)phosphine oxide

CAS Number: 75980-60-8 Content (W/W): >= 0.3 - < 1.0%

Synonym: Diphenyl(2,4,6-trimethylbenzoyl)phosphineoxide

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

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If in eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist. Remove contact lenses, if present. Immediate medical attention required.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Information on: Silicon dioxide

Symptoms: Overexposure may cause:, rhinitis, irritation of the mucous membranes, irritates the eyes and respiratory tract, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Information on: Proprietary acrylate

Symptoms: Overexposure may cause:, corneal injury, skin corrosion, severe pain, coughing, respiratory disorders, dyspnea, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Information on: diphenyl(2,4,6,-trimethylbenzoyl)phosphine oxide

Symptoms: Overexposure may cause:, allergic contact dermatitis, nausea, headache, vomiting,

dizziness, diarrhea, abdominal cramps

Indication of any immediate medical attention and special treatment needed

Note to physician

Treat according to symptoms (decontamination, vital functions), no

known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: water spray, dry powder, foam

Unsuitable extinguishing media for safety reasons: water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

harmful vapours, carbon oxides, nitrogen oxides

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

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Further information:

If exposed to fire, keep containers cool by spraying with water. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Ensure adequate ventilation. Avoid contact with the skin, eyes and clothing. Use personal protective clothing.

Environmental precautions

Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

For large amounts: Dike spillage. Pump off product.

For residues: Pick up with inert absorbent material (e.g. sand, earth etc.).

Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Avoid aerosol formation. Do not inhale vapours / aerosols. Avoid contact with the skin, eyes and clothing. Wear suitable protective clothing and gloves. Provide good ventilation of working area (local exhaust ventilation if necessary).

Protection against fire and explosion:

Heated containers should be cooled to prevent polymerization. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Further information on storage conditions: Containers should be stored tightly sealed in a dry place. Keep container dry because product takes up the humidity of air. Protect against heat. Protect from the effects of light. The stabilizer is only effective in the presence of oxygen. Ensure adequate inhibitor and dissolved oxygen level.

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

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Silicon dioxide ACGIH, US: TWA value 10 mg/m3 Inhalable particles;

ACGIH, US: TWA value 3 mg/m3 Respirable particles ;

OSHA Z3: TWA value 15 mg/m3 Total dust;

OSHA Z3: TWA value 5 mg/m3 Respirable fraction; TWA value 50 millions of particles per cubic foot

of air Total dust;

OSHA Z3: TWA value 15 millions of particles per cubic foot

of air Respirable fraction;

OSHA Z3: TWA value 0.8 mg/m3; The exposure limit is

calculated from the equation, 80mg/m3)/(%SiO2), using a value of 100% SiO2. Lower percentages

of SiO2 will yield higher exposure limits.

OSHA Z3: TWA value 20 millions of particles per cubic foot

of air;

Advice on system design:

Ensure adequate ventilation.

Personal protective equipment

Respiratory protection:

Persons likely to be exposed via inhalation, where engineering control and administrative control measures are inadequate, use a NIOSH certified (or equivalent) respirator with a minimum APF of 50.

Observe OSHA regulations for respirator use (29 CFR 1910.134).

Hand protection:

Wear chemically impervious protective gloves., Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness, chloroprene rubber (Neoprene), nitrile rubber (NBR) - 0.4 mm coating thickness, Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:

Impermeable protective clothing

General safety and hygiene measures:

Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. When using, do not eat, drink or smoke.

9. Physical and Chemical Properties

Form: liquid Odour: acrylic-like

Odour threshold: Not determined due to potential health hazard by inhalation.

Colour: whitish, cloudy

pH value: 6 - 8

(20 °C) neutral

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Freezing point: not determined
Boiling point: > 100 °C
Flash point: > 100 °C

Flammability: not highly flammable (derived from flash - and boiling point)

Lower explosion limit: not determined Upper explosion limit: not determined Autoignition: not determined Vapour pressure: not determined Density: 1.45 g/cm3 (20 °C)

Vapour density: not determined

Partitioning coefficient n- not applicable for mixtures

octanol/water (log Pow):

Self-ignition not self-igniting

temperature:

Thermal decomposition: > 170 °C
Viscosity, kinematic: not determined
Solubility in water: sparingly soluble

Solubility (qualitative): soluble

solvent(s): organic solvents,

Evaporation rate: not determined

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties: not fire-propagating

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is stabilized against spontaneous polymerization prior to despatch.

The product can polymerize if the shelf life or storage temperature are greatly exceeded. Heat develops during polymerization. Reacts with peroxides and other radical components.

Conditions to avoid

Avoid heat. Avoid UV-light and other radiation with high energy. Avoid direct sunlight. Avoid prolonged storage. Avoid inhibitor loss.

Incompatible materials

free radical initiators

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

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Thermal decomposition:

> 170 °C

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: May be harmful if swallowed. Based on available data, the classification criteria are not met.

<u>Oral</u>

Type of value: ATE Value: 4,350 mg/kg

Information on: Proprietary acrylate

Type of value: LD50 Species: rat (male/female)

Value: 3,530 mg/kg (OECD Guideline 401)

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-

Type of value: LD50 Species: rat (male/female)

Value: 588 mg/kg (OECD Guideline 401)

Inhalation

Type of value: ATE Value: > 20 mg/l Determined for vapor

Dermal

Type of value: ATE Value: > 5,000 mg/kg

Assessment other acute effects

Assessment of STOT single:

Based on available data, the classification criteria are not met.

Irritation / corrosion

Assessment of irritating effects: Skin contact causes irritation. May cause severe damage to the eyes.

<u>Skin</u>

Information on: Proprietary acrylate

Species: rabbit

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Result: Irritant.

Method: OECD Guideline 404

Eye

Information on: Proprietary acrylate

Species: rabbit

Result: Risk of serious damage to eyes.

Method: OECD Guideline 405

<u>Sensitizatio</u>n

Assessment of sensitization: Sensitization after skin contact possible.

Information on: Proprietary acrylate
Mouse Local Lymph Node Assay (LLNA)

Species: mouse Result: sensitizing

Method: OECD Guideline 429

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: Repeated exposure may affect certain organs. The product has not been tested. The statement has been derived from the properties of the individual components.

Genetic toxicity

Assessment of mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity

Assessment of carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity

Assessment of reproduction toxicity: May impair fertility. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: diphenyl(2,4,6,-trimethylbenzoyl)phosphine oxide

Assessment of reproduction toxicity: The results of animal studies suggest a fertility impairing effect.

<u>Teratogenicity</u>

Assessment of teratogenicity: May cause harm to the unborn child. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: diphenyl(2,4,6,-trimethylbenzoyl)phosphine oxide

Assessment of teratogenicity: At high doses there are indications of a developmental effect.

Other Information

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The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic toxicity

Information on: Acrylate derivative Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Information on: Acrylate ester Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. Harmful to aquatic organisms based on long-term (chronic) toxicity study data.

Information on: diphenyl(2,4,6,-trimethylbenzoyl)phosphine oxide

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Information on: Proprietary acrylate Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

Information on: Proprietary acrylate

LC50 (96 h) 2.2 - 4.6 mg/l, Leuciscus idus (DIN 38412 Part 15, static)

The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested.

Aquatic invertebrates

Information on: Proprietary acrylate

EC50 (48 h) 22.3 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)

Information on: Acrylate derivative

EL50 (48 h) 6 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic)

The details of the toxic effect relate to the nominal concentration.

Aquatic plants

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Information on: Proprietary acrylate

EC10 (72 h) 2.2 mg/l (growth rate), Desmodesmus subspicatus (DIN 38412 Part 9, static) EC50 (72 h) 16.7 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9, static)

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

Information on: Proprietary acrylate OECD Guideline 209 aerobic

activated sludge, domestic/EC20 (0.5 h): > 1,000 mg/l

Nominal concentration.

Information on: Acrylate derivative

other static

activated sludge, domestic, non-adapted/No observed effect concentration (672 h): 14.3 mg/l

Persistence and degradability

Assessment biodegradation and elimination (H2O)

Product is not expected to be readily biodegradable.

Bioaccumulative potential

Assessment bioaccumulation potential

The product has not been tested.

Mobility in soil

Assessment transport between environmental compartments

No data available.

Additional information

Add. remarks environm. fate & pathway:

Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

Other ecotoxicological advice:

The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected. Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Contact specialized companies about recycling.

Container disposal:

Dispose of in accordance with national, state and local regulations. Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released; restriction on use / listed

TSCA §5. Based on EPA's assessment that includes analogue data, a substance in this product has the potential to cause:

Carcinogenicity;

Genetic toxicity;

Specific target organ toxicity.

Hazard(s) not classifiable under GHS criteria.

This product contains a substance (CASRN 5117-12-4) which may cause internal organ and reproductive effects.

When using this product, use skin protection.

TSCA § 5(a) final Significant New Use Restriction (SNUR)

40 CFR 721.5185

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

State regulations

State RTKCAS NumberChemical namePA7631-86-9Silicon dioxide

NFPA Hazard codes:

Health: 3 Fire: 1 Reactivity: 0 Special:

16. Other Information

SDS Prepared by:

BASF NA Product Regulations SDS Prepared on: 2022/10/28

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END OF DATA SHEET