

Safety Data Sheet

Figure 4™ PRO-BLK 10

Revision Date: September 19, 2019

1. IDENTIFICATION OF THE PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the mixture: Figure 4 PRO-BLK 10

1.2 Use of the preparation: For use in Figure 4® systems

1.2 Company/undertaking identification:

3D Systems, Inc.
 333 Three D Systems Circle
 Rock Hill, South Carolina U.S.A.
 Phone: 803.326.3900 or
 Toll-free Phone: 800.793.3669
 e-mail: moreinfo@3dsystems.com
 Chemical Emergency:
 800.424.9300 – Chemtrec

2. HAZARDS IDENTIFICATION

2.1 Classification

Hazard classification according to 29 CFR 1910.1200

Physical Hazard:

None

Health Hazard:

Acute Toxicity (oral)	Category 4	H302
Serious Eye Damage/Eye Irritation	Category 1	H318
STOT RE 2 (Oral)	Category 2	H373
Skin Sensitization	Category 1	H317

Environmental Hazard:

Chronic aquatic toxicity	Category 3	H412
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2.2 Label Elements

Hazard pictograms and signal word:



GHS07



GHS05



GHS08

Signal word: Danger

Hazard determining components of labelling: 2-Propen-1-one, 1-(4-morpholinyl); 3,3,5-Trimethylcyclohexyl acrylate; 2-Propenoic acid, 2-methyl-, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-; Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)

Hazard statements:

H302: Harmful if swallowed
 H317: May cause an allergic skin reaction
 H318: Causes serious eye damage
 H373: May cause damage to organs through prolonged or repeated exposure
 H412: Harmful to aquatic life with long-lasting effect

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Precautionary statements:

Prevention:

P260: Do not breathe dust/fume/gas/mist/vapors/spray.
 P264: Wash contaminated skin thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P271: Use only outdoors or in a well-ventilated area.
 P272: Contaminated work clothing should not be allowed out of the workplace.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P285: In case of inadequate ventilation wear respiratory protection.

Response:

P314: Get medical advice/attention if you feel unwell.
 P302 + P352: IF ON SKIN: Wash with plenty of soap and water
 P333 + P313: If skin irritation or rash occurs: Get medical advice/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.
 P410 + P403: Protect from sunlight. Store in a well-ventilated place.
 P307 + P311: IF exposed: Call a POISON CENTER or doctor/physician.

Storage:

P410 + P403: Protect from sunlight. Store in a well-ventilated place.

Disposal:

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

2.3 Hazards Not Otherwise Classified

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical characterization:

Description: Organic mixture

3.2 Dangerous components:

Chemical name	CAS-number	EC-number	%	Classification Regulation (EC) 1272/2008
2-Propen-1-one, 1-(4-morpholinyl)	5117-12-4	418-140-1	30 - 50	Acute Toxicity (oral) Category 4 - H302 Serious Eye Damage/Eye Irritation Category 1 - H318 Skin Sensitization Category 1 - H317 STOT RE 2 (Oral) Category 2 - H373
2-Propenoic acid, 2-methyl-, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-	7534-94-3	231-403-1	5 - 25	Skin Corrosion/Irritation Category 2 - H315 Serious Eye Damage/Eye Irritation Category 2 - H319 STOT Single Exposure Category 3 - H335 Aquatic Chronic Category 3 - H412
3,3,5-Trimethylcyclohexyl acrylate	86178-38-3	289-200-9	5 - 25	Skin Sensitization Category 1 - H317 Aquatic Chronic Category 2 - H411 Aquatic Acute Category 1 - H400
Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)	162881-26-7	423-340-5	1 - 10	Skin Sensitization Category 1 - H317 Aquatic Chronic Category 4 - H413

4. FIRST AID MEASURES

4.1 General Information: Ensure that eyewash stations and safety showers are close to the workstation location.

4.2 In case of inhalation: May cause respiratory irritation. Move affected person to fresh air. If respiratory irritation occurs, if breathing becomes difficult seek medical attention immediately.

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4.3 In case of skin contact: May cause irritation or sensitization by skin contact, including redness and/or swelling. Immediately flush skin with plenty of soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse.

4.4 In case of eye contact: Irritating to eyes. Causes redness, swelling and pain. Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms persist.

4.5 In case of ingestion: Irritating to mouth, throat and stomach. If ingested, drink plenty of water and seek immediate medical attention. Do not induce vomiting.

4.6 Self-protection of the first aider: Put on appropriate protective equipment (see section 8). Move exposed person to fresh air. Remove contaminated clothing and shoes.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media: Water mist, dry chemical, carbon dioxide, or appropriate foam.

5.2 Extinguishing media which must not be used for safety reasons: High volume water jet.

5.3 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases: Thermal decomposition products can include CO₂, CO, NO_x and smoke.

5.4 Special protective equipment for fire-fighters: Wear full protective clothing, including helmet, self-contained positive-pressure or pressure demand breathing apparatus, protective clothing and facemask.

5.5 Additional information: Move container from area if it can be done without risk. Cool containers with water spray. Avoid inhalation of material or combustion by-products.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions: Keep unnecessary personnel away. Wear appropriate protective equipment and clothing. Consult expert immediately.

6.2 Environmental precautions: Stop the flow of material, if this is without risk. Ventilate contaminated area. Eliminate sources of ignition. In case of contamination of aquatic environment inform local authorities.

6.3 Methods for cleaning up: Wear appropriate protective equipment and clothing to minimise exposure. Use of certified respirators and chemical resistant gloves are required to avoid exposure to any unreacted materials during spill clean-up (use of a National Institute for Occupational Safety and Health (NIOSH) certified respirator with an Assigned Protection Factor (APF) of 50).

Absorb spillage with suitable absorbent materials. Place all waste in an appropriate air tight bags or containers for disposal. The material and its container must be disposed of as hazardous waste. Keep away from sources of ignition.

7. HANDLING AND STORAGE

7.1 Handling Provide adequate ventilation. Use suitable protective equipment. Avoid contact with skin and eyes. Do not breathe vapors or mist. Avoid ignition sources. Do not allow to enter drains or watercourses.

7.2 Storage: Store sealed in the original container at room temperature. Keep this material indoors in a cool, dry, well ventilated place. Store out of direct sunlight or UV light sources. Storage Temperature: below 35 °C / 95 °F. Storage class 10, environmentally hazardous liquids.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values:

General Product Information: No occupational exposure limits (PEL/TWA) have been established for this product.

8.2 Exposure controls

Technical measures to prevent exposure: Use only with 3D Systems Figure 4 systems with installed and fully functional carbon filtration systems. Uncured parts should be transported in closed containers.

Instructional measures to prevent exposure: When using, do not eat, drink or smoke. Wash hands after handling and before eating, smoking and using the lavatory and at the end of the day.

Personal protection equipment:

Respiratory protection: Recommend users establish appropriate engineering control measures, including but not limited to local exhaust ventilation, in rooms/areas where printers are installed and in post-processing areas, to minimize inhalation exposure.

Hand protection: Use impervious nitrile gloves.

Eye protection: Wear safety glasses or chemical goggles.

Body protection: Use apron and closed shoes.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance:

Physical state: liquid

Colour: black

Odour: mild acrylate

9.2 Important health, safety and environmental information

pH (20 °C):	NA
Melting point/range (°C):	NA
Boiling point/range (°C):	NA
Flash point (°C):	NA
Ignition temperature (°C):	NA
Vapour pressure (°C):	NA
Density (g/cm³):	NA
Bulk density (kg/m³):	NA
Water solubility (20°C in g/l):	NA
Partition coefficient:	NA
n-Octanol/Water (log Po/w):	NA
Viscosity, dynamic (mPa s):	~210 (@ 30 °C)
Dust explosion hazard:	NA
Explosion limits:	NA

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid: Avoid exposure to heat and light. Take necessary actions to avoid static electricity discharge.

10.2 Materials to avoid: Not tested

10.3 Hazardous decomposition products: Carbon dioxide, carbon monoxide and other toxic fumes can be released at high temperatures or upon burning.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution: NA

11.2 Acute effects: Formulation has not been tested.

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11.3 Chronic effects: This product contains a substance [2-Propen-1-one, 1-(4-morpholinyl)] which according to the US EPA may cause internal organ effects and reproductive effects.

11.4 Experiences made in practice: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

11.5 General remarks: Carcinogenicity: None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

12. Ecological information

12.1 Ecotoxicity: The aquatic toxicity of the product is unknown; however based on components, it is predicted that this material may be harmful to aquatic organisms or cause long-term adverse effects in the aquatic environment. Prevent contamination of soil, drains and surface waters.

12.2 Mobility: No information available for product.

12.3 Persistence and degradability: No information available for product.

12.4 Results of PBT assessment: No information available for product

12.5 Other adverse effects: No information available for product

13. DISPOSAL CONSIDERATIONS

13.1 Appropriate disposal / Product: Do not contaminate drains, soil or surface waters with this material or its container. Reduce waste by attempting to utilize product completely. Dispose of this container and its contents in accordance with all local, state, and federal regulations. Do not reuse or refill.

13.2 Waste codes / waste designations according to EWC / AVV: 070208

13.3 Appropriate packaging: NA

13.4 Additional information: Prior to disposal 3D Systems recommends consulting an approved waste disposal firm to ensure regulatory compliance.

14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID/GGVSE): Not regulated

14.2 Sea transport (IMDG-Code/GGVSee): Not regulated

14.3 Air transport (ICAO-IATA/DGR): Not regulated

14.4 US Department of Transportation (DOT): Not regulated

15. REGULATORY INFORMATION

15.1 EU regulations

EINEC/ELINCS/NLP: All the chemical substance are listed or exempt from registration.

REACH Annex XVII: None listed

15.2 EU National regulations

Wassergefährdungsklasse (water hazard class, Germany): WGK 2: Hazard to waters

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15.3 US FEDERAL

TSCA: All components are listed (active) or exempt from listing

TSCA – Section 5(e) Consent Order: This product contain 2-Propen-1-one, 1-(4-morpholinyl) subjected to TSCA section 5(e) consent order. Use only in 3D Systems Figure 4 stereolithographic printing applications; Do not release to waters; Avoid direct skin and inhalation exposure to the raw material.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpart D): This product contain 2-Propen-1-one, 1-(4-morpholinyl) (CAS 5117-12-4) subjected to Toxic Substances Control Act Section 12(b) Export Notification.

SARA 302 EHS List (40 CFR 355 Appendix A): None listed

SARA 313 (40 CFR 372.65): None listed

CERCLA (40 CFR 302.4): None listed

SARA 302 EHS List (40 CFR 355 Appendix A): None listed

SARA 313 (40 CFR 372.65): None listed

CERCLA (40 CFR 302.4): None listed

15.4 International regulations: All chemical substances in this product are listed according to chemical regulations is Australia, Canada, China, South Korea, New Zealand, Taiwan and Switzerland.

This product may contain substances NOT registered according to chemical regulations in Japan and Philippines.

15.5 Japanese regulations

Chemical Risk Information platform (CHRIP)	not applicable
Industrial Health and Safety Law	not applicable
Hazardous material	not applicable
Organic solvent poison prevention rule	not applicable
Ordinance on prevention of hazard due to specified chemical substances	not applicable
Lead Poisoning Prevention Rule	not applicable
Poison and Deleterious Substance Control law	not applicable
PRTR and Promotion of Chemical Management law (PRTR Law)	no listed components
Fire Services Act	Category 4, Class 3, oil
Explosives Law	not applicable
High pressure gas safety law	not applicable
Export Trade Control Order	not applicable
Waste Disposal and Public Cleaning Law	applicable. Before disposal, consult an approved waste disposal operative to ensure regulatory compliance.

OTHER INFORMATION

16.1 Relevant Hazard Statements (number and full text) referred to in sections 2 and 3 (according to (EC) No. 1272/2008):

H302 - Acute Toxicity (oral) Category 4
H318 - Serious Eye Damage/Eye Irritation Category 1
H317 - Skin Sensitization Category 1
H373 - STOT RE 2 (Oral) Category 2
H315 - Skin Corrosion/Irritation Category 2
H319 - Serious Eye Damage/Eye Irritation Category 2
H335 - STOT Single Exposure Category 3
H412 - Aquatic Chronic Category 3
H411 - Aquatic Chronic Category 2
H400 - Aquatic Acute Category 1
H413 - Aquatic Chronic Category 4

16.2 Further information:

SDS Creation Date: September 19, 2019

SDS Revision #: -00-A

SDS Revision Date: -

Reason for Revision: -

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www.3dsystems.com

800.793.3669 (Toll-free in the US GMT-07:00; N. America, Mon – Fri, 6:00 a.m. to 6 p.m.)

803.326.3900 (Outside the U.S. GMT-07:00; N. America, Mon – Fri, 6:00 a.m. to 6 p.m.)

+44 144-2282600 (Europe GMT+01:00; Mon – Fri, 08:00 a.m. - 17:00 p.m. MEZ)

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