

## Safety Data Sheet

### Figure 4<sup>®</sup> Rigid Gray

Revision Date: April 5, 2021

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

##### 1.1 Identification of the mixture: Figure 4 Rigid Gray

##### 1.2 Use of the preparation: For use in Figure 4<sup>®</sup> systems

##### 1.3 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](mailto:moreinfo@3dsystems.com)

3D Systems Europe Ltd.  
200 Maylands Avenue  
Hemel Hempstead  
Herts, HP2 7TG United Kingdom  
Phone: +44 144-2282600  
e-mail: [moreinfo@3dsystems.com](mailto:moreinfo@3dsystems.com)

3D Systems Asia-Pacific  
30-32 Ceylon St  
Nunawading VIC 3131  
Australia  
+61 3 9819 4422  
e-mail: [moreinfo@3dsystems.com](mailto:moreinfo@3dsystems.com)

##### 1.4. Emergency telephone number:

U.S.A.:  
Chemical Emergency:  
800.424.9300 – Chemtrec

Europe:  
Chemical Emergency:  
+1 703.527.3887 - Chemtrec

Australia:  
Chemical Emergency:  
+(61) 29037.2994 – Aus Chemtrec

#### 2. HAZARDS IDENTIFICATION

##### 2.1 Classification

GHS : Regulation (EC) No. 1272/2008, 29 CFR 1910

Physical Hazard:  
None

##### Health Hazard:

Acute (oral) toxicity	Category 4	H302
Skin irritation	Category 2	H315
Skin Sensitization	Category 1	H317
Serious Eye Damage/Eye Irritation	Category 1	H318
Reproductive Toxicity	Category 1	H360
STOT Repeated Exposure	Category 2	H373

##### Environmental Hazard:

Aquatic environment – Chronic	Category 3	H412
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##### 2.2 Label Elements

Regulation (EC) No, 1272/2008:

Hazard pictograms and signal word:



GHS07



GHS08



GHS05

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-; Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

##### Hazard statements:

H302: Harmful if swallowed.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H318: Causes serious eye damage.  
H360: May damaging fertility or the unborn child  
H373: May cause damage to organs through prolonged or repeated exposure.  
H412: Harmful to aquatic life with long-lasting effects.

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#### Precautionary statements:

##### Prevention:

P203: Obtain, read and follow all safety instructions before use.  
 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.  
 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.

##### Response:

P301 + P317: IF SWALLOWED: Get medical help.  
 P302 + P352: IF ON SKIN: Wash with plenty of soap and water  
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P317: Get medical help.  
 P318: IF exposed or concerned: Get medical advice.  
 P319: Get medical advice/attention if you feel unwell.  
 P321: Specific treatment (Wash contaminated skin with soap and water. Wash eyes with clean water for about 15 minutes).  
 P330: Rinse mouth.  
 P333 + P317: If skin irritation or rash occurs: Get medical help.  
 P362+P364: Take off contaminated clothing and wash before reuse.

##### Storage:

P405: Store locked up.

##### Disposal:

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

#### Supplementary information:

**Storage:** Protect from sunlight. Store in a well-ventilated place.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Chemical characterization:

**Description:** Organic mixture

#### 3.2 Mixtures:

Chemical name	CAS-number	EC-number	%	Classification Regulation (EC) 1272/2008
2-Propen-1-one, 1-(4-morpholinyl)	5117-12-4	418-140-1	35 - 45	Acute Tox (oral) Cat 4 - H302 Eye Irri Cat 1 - H318 STOT RE (Oral) Cat 2 - H373 Skin Sens Cat 1 - H317
3,3,5-Trimethylcyclohexyl acrylate	86178-38-3	289-200-9	10 - 20	Skin Irri Cat 2 - H315 Eye Irri Cat 2 - H319 STOT SE Cat 3 - H335 Aqu Chro Cat 3 - H412
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	10 - 20	Skin Sens Cat 1 - H317 Aqu Chro Cat 2 - H411 Aqu Acute Cat 1 - H400
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	278-355-8	1-2	Repro Tox Cat 2 - H360 Skin Sens Cat 1 - H317 Aqu Chro Cat 2 - H411
Nonhazardous materials	-	-	10-20	Not classified

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#### 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.

**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.

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#### 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 CO<sub>2</sub>, CO, NO<sub>x</sub> 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.

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#### 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 3M 6000 respirator with organic vapor cartridge A2 or half mask 3M 4251 is recommended).

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.

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#### 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: 6.1D - Non-combustible acutely toxic substances or substances with chronic effects.

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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.

**Instructual 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. In cases where engineering controls do not mitigate exposure to vapors, use of certified respirator is recommended.

**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

Appearance	-
Physical state	Liquid
Form	Not available
Color	Gray
Odor	Mild acrylate
Odor threshold	Not available
pH	Not available
Melting point/freezing point (°C)	Not available
Initial boiling point and boiling range (°C)	Not available
Flash point (°C)	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Relative density (g/cm <sup>3</sup> )	Not available
Upper/lower flammability or explosive limits	-
Flammability limit - lower (%)	Not available
Flammability limit - upper (%)	Not available
Explosive limit - lower (%)	Not available
Explosive limit - upper (%)	Not available
Vapor pressure	Not available
Vapor density	Not available
Solubility(ies)	-
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature (°C)	Not available
Viscosity (cPs)	Not available
Other information	-
Oxidizing properties	Not available
VOC (g/L)	Not available

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#### 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:** Oxidizing materials, strong acids and strong bases.

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

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#### 11. TOXICOLOGICAL INFORMATION

**11.1 Toxicokinetics, metabolism and distribution:** NA

**11.2 Acute effects:** Formulation has not been tested

**11.3 Chronic effects:** Formulation has not been tested

**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.

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#### 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

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#### 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.

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#### 14. TRANSPORT INFORMATION

##### 14.1 DOT:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
Packing group: Not available  
Environmental Hazard:  
    Marine pollutant: no  
Special Precautions for user: Not Available

##### 14.3 IATA:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
Packing group: Not available  
Environmental Hazard: No  
Special Precautions for user: Not Available

##### 14.2 IMDG:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
Packing group: Not available  
Environmental Hazard:  
    Marine pollutant: No  
EmS: Not Available

##### 14.1 ADR:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
    Hazard No (ADR): Not available  
    Tunnel restriction code: Not available  
Packing group: Not available  
Environmental Hazard: No  
Special Precautions for user: Not available

Further information: Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC code: Not applicable.

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#### 15. REGULATORY INFORMATION

##### 15.1. European Union Regulations:

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

**Persistent Organic Pollutants**

Not applicable

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not applicable

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#### Authorisations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended.**

Not listed

#### National regulations:

**German Water Hazard Class (WGK):** WGK 2 (hazard to waters)

#### 15.2. Chemical safety assessment

**Chemical Safety Report** - No information available

#### 15.3 US FEDERAL

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

**TSCA - 5(a) Significant New Use Rule List of Chemicals:** Contains 2-Propen-1-one, 1-(4-morpholinyl)- (CAS 5117-12-4) subjected to TSCA §5(a)(2) Significant New Use Rule at 40 CFR § 721.5185.

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpart D):** This product contains 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

**California Prop. 65 Components:** WARNING: This product can expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Chemical Name	CAS Number	Effect
Toluene	108-88-3	Reproductive harm
Carbon Black	1333-86-4	Cancer

**15.4 International regulations:** All components of this product are registered or exempt from registration according to chemical regulations in Australia, Canada, China, Japan, South Korea, New Zealand, Taiwan and United States.

There may be substances not listed in Philippines chemical inventory.

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

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

#### 15.5 Japanese regulations

Chemical Risk Information platform (CHRIP)	Listed
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.

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#### 16. OTHER INFORMATION

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

H317: May cause an allergic skin reaction  
H318: Causes serious eye damage  
H302: Harmful if swallowed  
H319 Causes serious eye irritation  
H312: Harmful in contact with skin  
H335: May cause respiratory irritation  
H373: May cause damage to organs through prolonged or repeated exposure  
H411: Toxic to aquatic life with long-lasting effects  
H412: Harmful to aquatic life with long-lasting effects  
H315: Causes skin irritation  
H360: May damage fertility or the unborn child  
H400: Very toxic to aquatic life

##### 16.2 Further information:

SDS Creation Date: .....December 2, 2020  
SDS Revision #:.....-02-A  
SDS Revision Date: .....April 5, 2021  
Reason for Revision: .....Update section 2, 7.

[www.3dsystems.com](http://www.3dsystems.com)

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