

Issuing Date 14-Sep-2021

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Revision Number 1.01

**1. Identification**Product identifier

Product Name Figure 4® Tough Clear

Other means of identification

Product Code(s) 420119

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use For use in Figure 4® systems

Restrictions on use No information available

Details of the supplier of the safety data sheetManufacturer Address3D Systems, Inc.  
333 Three D Systems Circle  
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Emergency telephone number

Company Phone Number 800.793.3669 (Toll-free)

Emergency Telephone Chemtec - 800.424.9300 (Toll Free)  
+1 703-527-3887**2. Hazard(s) identification**Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Reproductive toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2
Chronic aquatic toxicity	Category 3

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

**Danger****Hazard statements**

Harmful if swallowed  
Causes skin irritation  
Causes serious eye damage  
May cause an allergic skin reaction  
May damage fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure  
Harmful to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Contaminated work clothing must not be allowed out of the workplace  
Wear protective gloves/clothing and eye/face protection  
Avoid release to the environment

**Precautionary Statements - Response**

Specific treatment: Wash contaminated skin with soap and water. Wash eyes with clean water for about 15 minutes.  
IF exposed or concerned: Get medical advice/attention  
Immediately call a POISON CENTER or doctor/physician  
Get medical advice/attention if you feel unwell  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
IF ON SKIN: Wash with plenty of water and soap  
Take off contaminated clothing and wash it before reuse  
If skin irritation or rash occurs: Get medical advice/attention  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Other information**

Use with local exhaust ventilation. Store out of direct sunlight, UV light sources or heat. May be harmful in contact with skin.

**3. Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Chemical name	CAS No	Weight-%
Poly(oxy-1,2-ethanediyl), .alpha.-hydro.omega.-[(1-oxo-2- propenyl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3propanediol (3:1)	28961-43-5	35 - 45
2-Propen-1-one, 1-(4-morpholinyl)	5117-12-4	15 - 25
2- Propenoic acid ester	Trade secret	15 - 25
Butanoic acid ester	Trade secret	1 - 10
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	75980-60-8	1 - 5
Nonhazardous Components	NA	1 - 10

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. First-aid measures

### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	Ensure adequate ventilation. Avoid breathing vapors or mists. May cause respiratory irritation. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Avoid contact with eyes. Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
<b>Ingestion</b>	May be harmful if swallowed. If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

### Most important symptoms and effects, both acute and delayed

**Symptoms** Burning sensation. Itching. Rashes. Hives.

### Indication of any immediate medical attention and special treatment needed

**Note to physicians** May cause sensitization in susceptible persons. Treat symptomatically.

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b> Large Fire	Dry chemical, CO <sub>2</sub> , water spray or regular foam. CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the</b>	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Product is or

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<b>chemical</b>	contains a sensitizer. May cause sensitization by skin contact.
<b>Hazardous combustion products</b>	Hydrocarbons. Carbon dioxide (CO <sub>2</sub> ). Carbon monoxide. Nitrogen oxides (NO <sub>x</sub> ).
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	Wear self contained breathing apparatus for fire fighting if necessary. Cool drums with water spray.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid breathing (dust, vapor, mist, gas). Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
<b>Other information</b>	Use of a National Institute for Occupational Safety and Health (NIOSH) certified respirator with an Assigned Protection Factor (APF) of 50 is recommended. Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable. Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Prevention of secondary hazards</b>	Prevent entry into waterways, sewers, basements or confined areas.

## 7. Handling and storage

### Precautions for safe handling

<b>Advice on safe handling</b>	Use personal protection recommended in Section 8. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse. Remove contaminated clothing and shoes.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep only in the original container. Store/keep away from direct sunlight and UV light sources. Store at temperatures not exceeding 35 °C/ 95 °F.
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## 8. Exposure controls/personal protection

**Control parameters**

**Exposure Limits**

**Biological occupational exposure limits**

Not available.

**Appropriate engineering controls**

**Engineering controls**

Eyewash stations. 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.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Tight sealing safety goggles.

**Hand protection**

Impervious gloves. Wear suitable gloves. Impervious gloves.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
-	Nitrile rubber	8 mil	

**Skin and body protection**

Avoid contact with eyes, skin and clothing. Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection**

Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Uncured parts should be transported in closed containers. Wear skin and eye/face protection PPE during part processing. Use of a dust mask is recommended during cleaning surfaces with dust or when dust generation is a possibility during sanding or grinding operations.

**Environmental exposure controls**

Do not allow to enter into soil/subsoil. Avoid release to the environment.

**General hygiene considerations**

Use only with 3D Systems Figure 4 systems with installed and fully functional carbon filtration systems. Uncured parts should be transported in closed containers. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

**9. Physical and chemical properties**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid
<b>Appearance</b>	Viscous
<b>Color</b>	colorless; /; clear
<b>Odor</b>	Mild Acrylic
<b>Odor threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	-
<b>Melting point / freezing point</b>	<-80 °C	-
<b>Boiling point / boiling range</b>	305 °C / 581 °F	-
<b>Flash point</b>	NA	Sample solidifies before flash Pensky-Martens Closed Cup (PMCC)
<b>Evaporation rate</b>	No data available	-
<b>Flammability (solid, gas)</b>	No data available	-

<b>Flammability Limit in Air</b>		-
Upper flammability or explosive limits	-	
Lower flammability or explosive limits	-	
<b>Vapor pressure</b>	No data available	-
<b>Relative vapor density</b>	No data available	-
<b>Relative density</b>	1.1g/cm <sup>3</sup>	-
<b>Water solubility</b>	Insoluble in water	-
<b>Solubility(ies)</b>	No data available	-
<b>Partition coefficient</b>	No data available	-
<b>Autoignition temperature</b>	No data available	-
<b>Decomposition temperature</b>	>340 °C / °F	-
<b>Kinematic viscosity</b>	No data available	-
<b>Dynamic viscosity</b>	46 (@30 °C) mPa s	-
<b>Other information</b>		
<b>Explosive properties</b>	No information available	
<b>Oxidizing properties</b>	No information available	
<b>Softening point</b>	No information available	
<b>Molecular weight</b>	No information available	
<b>VOC content</b>	295 g/L	
<b>Liquid Density</b>	No information available	
<b>Bulk density</b>	No information available	

## 10. Stability and reactivity

<b>Reactivity</b>	Stable under normal conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Conditions to avoid</b>	Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store out of direct sunlight, UV light sources or heat.
<b>Incompatible materials</b>	Strong oxidizing agents, strong acids, and strong bases. Strong acids. Strong bases. Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Thermal decomposition can lead to release of irritating and toxic gases and vapors.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation. Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

**Ingestion**

Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components).

**Symptoms related to the physical, chemical and toxicological characteristics**
**Symptoms**

Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.

**Acute toxicity**
**Numerical measures of toxicity**
**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Poly(oxy-1,2-ethanediyl), .alpha.-hydro.omega.-[(1-oxo-2-propenyl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3propanediol (3:1) 28961-43-5	-	> 13200 mg/kg ( Rabbit )	-
2-Propen-1-one, 1-(4-morpholinyl) 5117-12-4	-	> 2000 mg/kg ( Rat )	-
Butanoic acid ester	-	> 2000 mg/kg ( Rat )	-
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide 75980-60-8	-	> 2000 mg/kg ( Rat )	-

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**
**Skin corrosion/irritation**

Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation**

Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

**Respiratory or skin sensitization**

May cause an allergic skin reaction.

**Germ cell mutagenicity**

No information available.

**Carcinogenicity**

No information available.

**Reproductive toxicity**

Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child. 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.

**STOT - single exposure**

No information available.

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**Interactive effects** No information available.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Poly(oxy-1,2-ethanediyl), .alpha.-hydro.omega.-[(1-oxo-2-propenyl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3propanediol (3:1) 28961-43-5	-	LC50: =1.95mg/L (96h, Danio rerio)	-	-

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

Chemical name	Partition coefficient
Poly(oxy-1,2-ethanediyl), .alpha.-hydro.omega.-[(1-oxo-2-propenyl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3propanediol (3:1) 28961-43-5	2.89
2-Propen-1-one, 1-(4-morpholinyl) 5117-12-4	-0.46
Butanoic acid ester	3.99
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide 75980-60-8	3.1

**Other adverse effects** No information available.

## 13. Disposal considerations

### Waste treatment methods

**Waste from residues/unused products** Reduce waste by attempting to utilize product completely. Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

**Contaminated packaging** Do not reuse empty containers.



## 14. Transport information

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated
<u>ADR</u>	Not regulated

## 15. Regulatory information

### International Inventories

**TSCA** All ingredients are listed (Active) or exempt.

**U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)**  
 TSCA Section 12(b): 2-Propen-1-one, 1-(4-morpholinyl), Butanoic acid ester subjected.

Chemical name	TSCA- Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)
2-Propen-1-one, 1-(4-morpholinyl) 5117-12-4	Section 5(a)
Butanoic acid ester	Section 5(a)

**TSCA Section 6 restricted substances** This formulation DO NOT contain substances listed under the EPA Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h).

**EINECS/ELINCS** All ingredients are listed or exempt.  
**ENCS** All ingredients are listed or exempt.  
**IECSC** All ingredients are listed or exempt.  
**KECL** All ingredients are listed or exempt.  
**TCSI** All ingredients are listed or exempt.

### **Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemical Substances

### US Federal Regulations

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**US State Regulations**
**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Butylated hydroxytoluene 128-37-0	X	X	X

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. Other information**

<b>NFPA</b>	<b>Health hazards</b> 3	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Special hazards</b> -
<b>HMIS</b>	<b>Health hazards</b> 3*	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal protection</b> X
<i>Chronic Hazard Star Legend</i>		<i>* = Chronic Health Hazard</i>		

**Key or legend to abbreviations and acronyms used in the safety data sheet**
**Legend Section 8: Exposure controls/personal protection**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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**Disclaimer**

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**End of Safety Data Sheet**