

Safety Data Sheet

According to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

Figure 4™ TOUGH-BLK 20

Revision Date: April 1, 2019

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

1.1 Identification of the mixture: **Figure 4 TOUGH-BLK 20**

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

1.3 Company/undertaking identification:

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

3D Systems Europe Ltd.
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Hemel Hempstead
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Chemical Emergency:
+1 703.527.3887 - Chemtrec

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+(61) 29037.2994 – Aus Chemtrec

2. HAZARDS IDENTIFICATION

2.1 Classification

GHS : Regulation (EC) No. 1272/2008, 29 CFR 1910, Australian Dangerous Goods Code:

Skin Sensitization	Category 1	H317
Aquatic environment – Acute	Category 1	H400
Aquatic environment – Chronic	Category 2	H411

2.2 Label Elements

Regulation (EC) No, 1272/2008:

Hazard pictograms and signal word:



GHS07



GHS 09

Signal word: Warning

Hazard determining components of labelling: Methacrylate Ester Monomer; Trimethyl cyclohexyl acrylate; Isobomyl acrylate; 2-Propenoic acid, 2-phenoxyethyl ester; Stabiliser

Hazard statements:

H317: May cause an allergic skin reaction
H400: Very toxic to aquatic life
H411: Toxic to aquatic life with long-lasting effects

Precautionary statements:

P280: Wear protective gloves, protective clothing, eye protection
P302+352: If on skin, wash with soap and water
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention
P273: Avoid release to the environment.
P305+351+338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
P410+403: Protect from sunlight. Store in a well-ventilated place
P501: Dispose of contents/container in accordance with local/regional regulations

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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
Methacrylate Ester Monomer	Proprietary	Proprietary	25-35	Skin Sensitization Category 1 - H317
Trimethyl cyclohexyl acrylate	86178-38-3	289-200-9	10-20	Skin Sensitization Category 1 - H317 Aquatic Chronic Category 2 - H411 Aquatic Acute Category 1 - H400
Isobomyl acrylate	5888-33-5	227-561-6	10-20	Skin Sensitization Category 1 - H317 Aquatic Chronic Category 2 - H411 Aquatic Acute Category 1 - H400
2-Propenoic acid, 2-phenoxyethyl ester	48145-04-6	256-360-6	1- 2.5	Reproductive Toxicity Category 2 - H361 Skin Sensitization Category 1 - H317 Aquatic Chronic Category 2 - H411
Phenylbis (2,4,6-trimethyl benzoyl)- phosphine oxide	162881-26-7	423-340-5	1-5	Skin Sensitization Category 1 - H317 Aquatic Chronic Category 4 - H413
Stabiliser	Proprietary	Proprietary	1-2.5	Skin Sensitization Category 1 - H317 Aquatic Acute Category 1 - H400 Aquatic Chronic Category 1 - H410

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.

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.

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Revision Date: April 1, 2019

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. Absorb spillage with suitable absorbent materials. Place all waste in an appropriate container 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.

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.

Component Analysis:

Component	Component Manufacturer IEL (Internal Exposure Limit)
Isobornyl acrylate	NA

8.2 Exposure controls

Technical measures to prevent exposure: Use local exhaust ventilation.

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: If ventilation cannot effectively keep vapor concentrations below established limits, appropriate certified respiratory protection must be provided (e.g. 3M 6000 with organic vapor cartridge A2 or half mask 3M 4251).

Hand protection: Use impervious nitrile gloves.

Eye protection: Wear safety glasses or chemical goggles.

Body protection: Use apron and closed shoes.

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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):	~1200 (@ 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 (toxicity tests)

Component	LD ₅₀ Oral	LD ₅₀ Dermal
Isobornyl acrylate	>4890 mg/kg (rat)	>5000mg/kg rabbit)

Irritant and corrosive effects: Irritating

Irritation to respiratory tract: Irritating

Sensitisation: Causes sensitisation

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

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

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Revision Date: April 1, 2019

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.

Component	Data
Isobornyl acrylate	EC50 (48h)- 1 mg/l (daphnia magna) EC50 (72h)- 1.98 mg/l (green algae)

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):

Official transport designation: Environmentally hazardous substance, liquid N.O.S.

UN-No.: 3082

Class: 9

Classification Code: M6

Packing group: III

Hazard label: 9

Risk No: 90

Marine pollutant: yes

Contains: Acrylates

14.2 Sea transport (IMDG-Code/GGVSee):

Official transport designation: Environmentally hazardous substance, liquid N.O.S.

UN-No.: 3082

Class: 9

Packing group: III

Hazard label: 9

Marine pollutant: yes

Contains: Acrylates

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14.3 Air transport (ICAO-IATA/DGR):

Official transport designation: Environmentally hazardous substance, liquid N.O.S.

UN-No.: 3082

Class: 9

Packing group: III

Hazard label: 9

Contains. Acrylates

14.4 US Department of Transportation (DOT):

Proper Shipping Name: Environmentally hazardous substance, liquid N.O.S.

UN-No.: 3082

Class: 9

Packing group: III

Marine pollutant: yes

Contains. Acrylates

15. REGULATORY INFORMATION

15.1 EU regulations

EINEC/ELINCS/REACH: Volumes are restricted (annual volume of this formulation must be <3000kg)

REACH Annex XVII: None listed

15.2 EU National regulations

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

15.3 US FEDERAL

TSCA: All components are listed or exempt from listing

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 the chemical substances listed in this formulations are listed or exempt from listing in Japan, and USA.

This product may contain substances NOT listed according to chemical regulations is Australia, Canada, China, South Korea, New Zealand, Philippines, Taiwan and Switzerland.

15.5 Japanese regulations

Chemical Risk Information platform (CHRIIP)	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.

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OTHER INFORMATION

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

Skin Sens. 1, H 317: Skin sensitization, category 1: May cause an allergic skin reaction

Aqu. Acute 1, H400: Aquatic environment- acute hazard, category 1: Very toxic to aquatic life

Aqu. Chronic.2, H411; Aquatic environment:- long term hazard, category 2: Toxic to aquatic life with long lasting effects

16.2 Further information:

SDS Creation Date:February 08, 2019

SDS Revision #:-01-A

SDS Revision Date:April 1, 2019

Reason for Revision:Update product use and section 3.

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