



Safety Data Sheet
according to Regulation (EC) No 1907/2006 (REACH),
GHS Rev 04 (2011): US, OSHA, CMA, ANSI,
WHS Regulations Australia

VisiJet® C4 Spectrum Clear

Revision Date: October 31, 2013

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

1.1 Identification of the mixture: VisiJet® C4 Spectrum Clear

1.2 Use of the preparation: For use with ProJet® 4500 3D printer

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
Chemical Emergency:
800.424.9300 - Chemtrec

3D Systems Europe Ltd.
Mark House, Mark Road
Hemel Hempstead
Herts HP2 7
United Kingdom
Phone: +44 144-2282600
Chemical Emergency:
+1 703.527.3887 - Chemtrec (U.S.)

2. HAZARDS IDENTIFICATION

2.1 Classification

GHS : Regulation (EC) No. 1272/2008, HazCom 2012:

Eye irritation	Category 2	H319
Skin Sensitisation	Category 1	H317
Specific target organ toxicity — single exposure	Category 3	H335
Skin irritation	Category 2	H315
Aquatic environment-long term hazard	Category 3	H412

Regulation (EC) 67/548/EEC and 1999/45/EC:

Xi, R 36/37/38, R43, R52/53

2.2 Label Elements

Regulation (EC) No, 1272/2008:

Hazard pictograms and signal word:



GHS07

Signal word: Warning

Hazard determining components of labelling: Isobornyl acrylate, alkoxyated aliphatic diacrylate

Hazard statements:

H319: Causes serious eye irritation
H317: May cause an allergic skin reaction
H335: May cause respiratory irritation
H315: Causes skin irritation
H412: Harmful to aquatic life with long lasting effects

Precautionary statements:

P210: Keep away from heat/sparks/open flames/hot surfaces-No smoking
P260: Do not breathe gas/mist/vapors/spray
P280: Wear protective gloves, protective clothing, eye protection
P302+350: If on skin, wash with soap and water



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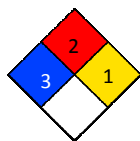
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P305+351+338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

P403+235: Store in a well ventilated place. Keep cool

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



NFPA Ratings

- 0 = Minimal
- 1 = Slight
- 2 = Moderate
- 3 = Serious
- 4 = Severe

Hazardous Materials Identification System (HMIS):

(Degree of hazard: 0 = low, 4 = extreme):

- Health 3
- Flammability 2
- Physical Hazards 1

Personal Protection:
Skin, eye protection

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical characterization:

Description: Organic mixture

3.2 Dangerous components:

Chemical name	CAS-No	EC-No	%	Classification	
				Regulation (EC) 1272/2008	Regulation 67/548/EEC, 1999/45/EC
Isobornyl acrylate	5888-335-	227-561-6	17-25	Skin Irrit. 2, H315 Eye Irrit.2, H319, STOT SE 3, H335, Aqu. Chron. 2, H 411	Xi, N, R36/37/38
Alkoxyated aliphatic diacrylate	proprietary		65-75	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317	Xi,R36/38, R43
tert.- Butyl hydroperoxide	75-91-2	200-915-7	2-2.5	Flam. Liq. 3, H226 Org. Perox., F, H242 Acute Tox., 4, H302 Acute Tox., 3, H311 Acute Tox., 3, H331 Skin Corr., 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta., 2, H341 STOT SE3, H335 Aquatic Chronic, 2, H411	O; R 7 R10 T; R23 Xn; R21/22 C; R34 Xi; R43 Mut.Cat.3; R68 N; R51/53

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 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. 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
Urethane acrylate oligomers	NA
tert.- Butyl hydroperoxide	Inhalation: 10.37 mg/m ³ (short term, systemic effects) 21.34 mg/m ³ (short term, local effects) 3.08 mg/m ³ (long term, systemic effects,) 0.83 mg/m ³ (long term, local effects) Skin contact: 12.5 mg/kg bw/day (long term, systemic effects)

8.2 Exposure controls

Technical measures to prevent exposure: Use explosion-proof 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.



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Personal protection equipment:

Respiratory protection: : If ventilation cannot effectively keep vapor concentrations below established limits, appropriate certified respiratory protection must be provided.

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: clear

Odour: Mild

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):	ca. 69
Ignition temperature (°C):	NA
Vapour pressure (°C):	NA
Density (g/cm3):	1.1
Bulk density (kg/m3):	NA
Water solubility (20 °C in g/l):	slightly soluble
Partition coefficient:	NA
n-Octanol/Water (log Po/w):	NA
Viscosity, dynamic (mPas,25C):	15-16
Dust explosion hazard:	NA
Explosion limits:	NA

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid: Avoid exposure to heat. 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.

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	NA	NA
Urethane acrylate oligomers	>5000mg/kg (rat)	NA
tert.- Butyl hydroperoxide	560 mg/kg (rat)	350-550 mg/kg (rabbit)

Irritation to respiratory tract: irritating

Skin irritation: irritating

Eye irritation: 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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12. Ecological information

12.1 Ecotoxicity: The aquatic toxicity of the product is unknown; however based on the 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
tert.- Butyl hydroperoxide	EC50 (48h): 141 mg/l (Daphnia magna) LC50 (96h): 56.9 mg/l (Poecilia reticulata)

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

Official transport designation:

Class:

Classification Code:

UN-No.:

Packing group:

Hazard label:

Tunnel restriction code:

Special provisions:

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

Proper Shipping Name:

Class:

UN-No.:

Packing group:

EmS:

Marine Pollutant:

Special provisions:

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

Proper Shipping Name:

Class:

UN-No.:

Packing group:

Special provisions:



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15. REGULATORY INFORMATION

15.1 EU regulations

EINEC/ELINCS/NLP: All materials are listed

REACH Annex XVII: None listed

15.2 National regulations

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

15.3. US FEDERAL

TSCA: All materials are listed on the TSCA Inventory or are not subject to TSCA requirements

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

SARA 313 (40 CFR 372.65): Antimony Compounds (category N010)

CERCLA (40 CFR 302.4): None listed

15.3. Australian regulations

SUSDP, Industrial Chemicals Act 1989:

Australian Inventory of Chemical Substances, AICS: Listed

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 irrit. 2, H 315- Skin irritation, category 2, H315: Causes skin irritation

Skin sens. 1, H 317- Skin sensitization, category 1, H317: May cause an allergic skin reaction

Eye Irrit. 2, H319- Eye irritation, category 2, H319: Causes serious eye irritation

STOT SE 3, H335- Specific target organ toxicity - single exposure, category 3, H335: May cause respiratory irritation

Aqu. Chron.3, H412- Aquatic environment-long term hazard, category 3, H412: Harmful to aquatic life with long lasting effects

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

Flam.Liq.3, H226- Flammable liquids, category 3: Flammable liquid and vapor

Org, Perox. F, H242- Organic peroxides, category F: Heating may cause a fire

Acute Tox.4, H302- Acute toxicity, oral, category 4: Harmful if swallowed

Acute Tox.3, H 311- Acute toxicity, dermal, category 3: Toxic in contact with skin

Skin Corr. 1, H 314- Skin corrosion/irritation, category 1: Causes severe skin burns and eye damage

Eye Dam. 1, H318- Serious eye damage/eye irritation, category 1: Causes serious eye damage

Acute Tox.2, H330- Acute toxicity, inhalation, category 2: Fatal if inhaled

Acute Tox.3, H331- Acute toxicity, inhalation, category 3: Toxic if inhaled

Muta 2, H341: Germ cell mutagenicity, category 2: Suspected of causing genetic defects

Relevant R-Phrases (number and full text) referred to in sections 2 and 3:

R36/37/38: Irritating to eyes, respiratory system and skin

R43: May cause sensitization by skin contact

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R 7: May cause fire.

R10: Flammable.

R21/22: Harmful in contact with skin and if swallowed.

R23: Toxic by inhalation.

R34: Causes burns.

R43: May cause sensitization by skin contact.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R68: Possible risk of irreversible effects.



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16.2 Further information:

SDS Creation Date: October 31, 2013

SDS Revision #: NA

SDS Revision Date: NA

Reason for Revision: NA

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