

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

VisiJet[®] M2 ENT, VisiJet M2 EBK

Revision Date: March 18, 2018

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

1.1 Identification of the mixture: **VisiJet[®] M2 ENT, VisiJet M2 EBK**

1.2 Use of the preparation: For use with ProJet[®] 2500 systems

1.3 Company/undertaking identification:

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2. HAZARDS IDENTIFICATION

2.1 Classification:

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

Eye irritation	Category 2	H319
Skin irritation	Category 2	H315
Skin Sensitization	Category 1	H317
Acute toxicity, inhalation	Category 3	H331
Aquatic environment – long-term hazard	Category 2	H411

2.2 Label Elements

Regulation (EC) No, 1272/2008:

Hazard pictograms and signal word:



GHS06



GHS07



GHS09

Signal word: Danger

Hazard determining components of labelling: Monofunctional aliphatic urethane acrylate

Hazard statements:

H319 Causes serious eye irritation
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H331 Toxic if inhaled
H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P273 Avoid release to the environment
P280 Wear protective gloves, protective clothing, eye protection
P302+350 If on skin, wash with soap and water
P304+340 If inhaled: Remove person to fresh air and keep comfortable for breathing.

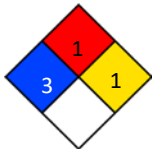
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P311	Call a POISON CENTER/Doctor
P333+313	If skin irritation or rash occurs: Get medical advice/attention
P362+364	Take off contaminated clothing and wash it before reuse
P305+351+338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
P410+403	Protect from sunlight. Store in a well-ventilated place
P391	Collect spillage
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 **1**
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
Monofunctional aliphatic urethane acrylate	63225-53-6	264-036-0	70-80	Acute Tox.3, H331 Skin Sens.1, H317 Aqu. Chronic 2, H411
Isobornyl methacrylate	7534-94-3	231-403-1	5-10	Eye Irrit. 2, H319 Skin Irrit.2, H 315 Skin Sens.1, H317 Aqu. Chronic 2, H411
Phenylbis (2,4,6-trimethyl benzoyl)- phosphine oxide	162881-26-7	423-340-5	1-3	Skin Sens. 1, H317 Aqu. Chronic 4, H413

4. FIRST AID MEASURES

4.1 General Information: Ensure that eyewash stations and safety showers are close to the workstation location. Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours. Therefore medical observation is required for at least 48 hours after the accident .

In case of irregular breathing or respiratory arrest provide artificial respiration.

Involve doctor immediately.

4.2 In case of inhalation: Move affected person to fresh air. Call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

Seek medical treatment.

Do not use mouth to mouth or mouth to nose resuscitation.

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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. 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.

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Component Analysis:

Component	Component Manufacturer IEL (Internal Exposure Limit)		
Phenylbis (2,4,6-trimethyl benzoyl)- phosphine oxide	7.8 mg/m ³		
	DNEL (Derived No-Effect Level)		
Monofunctional aliphatic urethane acrylate	Long Term Oral	Long Term Dermal	Long Term Inhalation
	1 mg/kg bw/day Population: Consumers Effects: Systemic	1 mg/kg bw/day Population: Consumers Effects: Systemic	1.7 mg/m ³ Population: Consumers Effects: Systemic
		2 mg/kg bw/day Population: Worker	9.9 mg/m ³ Population: Workers Effects: Systemic

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. In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Short term filter device: Filter A/P2

Hand protection: Use thick (>0.5 mm) 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: Slightly yellow or black

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):	VisiJet M2-ENT 141°C / VisiJet M2-EBK 147°C	(COC)
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):	insoluble	
Partition coefficient:	NA	
n-Octanol/Water (log Po/w):	NA	
Viscosity, dynamic (mPa s):	12 (80°C)	
Dust explosion hazard:	NA	
Explosion limits:	NA	

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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.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution: NA

11.2 Acute effects (toxicity tests)

Component	LD ₅₀ Oral	LD ₅₀ Dermal	LC _{50/4h} Inhalative
Monofunctional aliphatic urethane acrylate	>2000-5000 mg/kg (rat)	NA	0.5 - 1 mg/l (rat) (OECD 436 (inhalative toxicity 4h, Rat))
Isobornyl methacrylate	NA	NA	
Phenylbis (2,4,6-trimethyl benzoyl)- phosphine oxide	>2000 mg/kg (rat)	> 2000 mg/kg	

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.

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			
	EC 50/48h	EC50/72h	EC0 (72h)	LC50 (96h)
Monofunctional aliphatic urethane acrylate	18.6 mg/l (daphnia)	5.98 mg/l (algae)	2.72 mg/l (fish)	2.52 mg/l (fish)
Isobornyl methacrylate	NA			
Phenylbis (2,4,6-trimethyl benzoyl)- phosphine oxide	EC 50 (48h):117.5 mg/l (Daphnia magna)			

12.2 Persistence and degradability

Component	Data
Monofunctional aliphatic urethane acrylate	Aquatic half-life Fresh water 132 days, 25°C Biodegradability: Not readily

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12.3 Bioaccumulative potential

Component	Data
Monofunctional aliphatic urethane acrylate	Biodegradability 15 % (28d) (OECD 301F) Not readily biodegradable (according to OECD criteria) LogPow 1.82

12.4 Mobility in soil

Component	Data
Monofunctional aliphatic urethane acrylate	Soil/water partition coefficient (K _{oc}) 75.86

Ecotoxicological effects:

- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms

12.5 Results of PBT and vPvB assessment

- **PBT:** Persistent: Yes
- **vPvB:** Not applicable.

12.6 Other adverse effects

No further relevant information available.

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: 08 01 99 wastes not otherwise specified

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 UN-Number

ADR, IMDG, IATA UN2810

14.2 UN proper shipping name

· ADR TOXIC LIQUID, ORGANIC, N.O.S.
(2-[[[butylamino]carbonyl]oxy]ethyl acrylate),
ENVIRONMENTALLY HAZARDOUS

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- **IMDG** TOXIC LIQUID, ORGANIC, N.O.S.
(2-[[[butylamino]carbonyl]oxy]ethyl acrylate),
- **IATA** MARINE POLLUTANT
TOXIC LIQUID, ORGANIC, N.O.S.
(2-[[[butylamino]carbonyl]oxy]ethyl acrylate)

14.3 Transport hazard class(es)

- **ADR, IMDG**



- **Class** 6.1 Toxic substances.
- **Label** 6.1

- **IATA**



- **Class** 6.1 Toxic substances.
- **Label** 6.1

14.4 Packing group

- **ADR, IMDG, IATA** III

14.5 Environmental hazards:

- **Marine pollutant:** Yes
Symbol (fish and tree)
- **Special marking (ADR):** Symbol (fish and tree)

14.6 Special precautions for user

- **EMS Number:** Warning: Toxic substances.
- **Stowage Category** F-A, S-A
- **Stowage Code** A
SW2 Clear of living quarters.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

Transport/Additional information:

- **ADR**
- **Limited quantities (LQ)** 5L
- **Tunnel restriction code** E
- **UN "Model Regulation":** UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (2-[[[BUTYLAMINO]CARBONYL]OXY]ETHYL ACRYLATE), 6.1, III, ENVIRONMENTALLY HAZARDOUS

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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 EU 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): None listed
CERCLA (40 CFR 302.4): None listed

15.4 Australian regulations

SUSDP, Industrial Chemicals Act 1989:
Australian Inventory of Chemical Substances, AICS: Listed

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.

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):

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
Acute Tox.3, H331- Acute toxicity, category 3, H 331: Toxic if inhaled
Aqu.Chron. 2, H411-1: Aquatic environment – long-term hazard, category 2, H411: Toxic to aquatic life with long lasting effects
Aqu. Chron. 4, H413: Aquatic environment – long-term hazard, category 4, H413: May cause long lasting harmful effects to aquatic life

16.2 Further information:

SDS Creation Date:..... December 30, 2015
SDS Revision #:.....-02
SDS Revision Date:..... March 18, 2018
Reason for Revision:..... Update section 1, 3, 8, 11, 12, 13, 14, 16

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