

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Product/Trade Name:** VisiJet® HR 200 Plastic Material**Chemical Family:** Organic mixture**Product Use:** For use with the InVision™ HR 3D Printer**Hazardous Materials Identification System (HMIS):**

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

| | |
|------------------|---|
| Health | 2 |
| Flammability | 1 |
| Physical Hazards | 1 |

Personal Protection:

Skin, eye protection

Manufacturer:

| | |
|----------------------|--|
| Manufacturer Contact | 3D Systems GmbH Guerickeweg 9 Darmstadt, Germany |
| For Information | Phone: +49 (0) 6151 357-357 Fax: +49 (0) 6151 357-111 |
| Emergency | 703.527.3887 - Chemtrec (U.S.) |

II. COMPOSITION INFORMATION

| EC # | Component | Classification | Percent |
|---------------------------------------|--|-------------------------------|-----------|
| 203-652-6 | Triethylene glycol dimethacrylate ester (CAS# 109-16-0) | Xi, R36/38 R43 | 45% – 55% |
| Mixture proprietary proprietary | Urethane acrylate polymer 26% reactive monomer (CAS# proprietary) 74% urethane acrylate polymer (CAS# proprietary) | - N; R36/37/38 R51/53 - | 35% – 45% |
| polymer | Polypropylene Glycol Monomethacrylate (CAS# 39420-45-6) | Xi; R36/38 | 1% – 5% |

Component Information/Information on Non-Hazardous Components**General Product Information**

This preparation is classified as hazardous according to European Union Directives 67/548/EEC and 99/45/EC.

III. HAZARDS IDENTIFICATION**Emergency Overview**

This material is an irritant and a sensitizer. Causes eye irritation. Causes skin irritation. Causes respiratory tract irritation. Can cause allergic skin reaction. Hazardous polymerization can occur upon depletion of inhibitor or exposure to heat or UV light.

Substance Preparation Classification

This preparation has been classified for the European Union according to Annex VI Directives 67/548/EEC and 99/45/EC.

Xi; R36/37/38 R43 R52/53

Potential Health Effects:

| | |
|-------------|--|
| Eyes: | Can cause irritation consisting of redness, swelling and pain. |
| Skin: | Can cause irritation or other allergic reactions, including redness and/or swelling. |
| Inhalation: | Inhalation causes respiratory irritation. |
| Ingestion: | Ingestion can cause nausea, diarrhea and/or stomach pain. |
| Chronic: | Can cause an allergic skin reaction with repeated or prolonged exposure consisting of redness, swelling and/or rash (urticaria). |

Medical Conditions Aggravated by Exposure

Could irritate an existing dermatitis or respiratory condition.

IV. FIRST AID MEASURES

- Skin contact:** Immediately flush skin with plenty of soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse.
- Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists. Avoid exposure to UV and other light sources.
- Inhalation:** Move affected person to fresh air. In case of asphyxia, initiate artificial respiration immediately. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion:** Ingestion is unlikely. However, if large quantities are swallowed, get medical attention and, if directed by medical personnel, induce vomiting immediately. Never give anything by mouth to an unconscious person.

Notes to Physician

Allergic dermatitis in susceptible individuals may be delayed. It may appear after weeks or even months of frequent and prolonged contact.

V. FIRE FIGHTING MEASURES

- | | |
|---------------------------------|---------------------------------|
| Flash Point: NA | Method Used: NA |
| Upper Flammable Limit (UFL): NA | Lower Flammable Limit (LFL): NA |
| Auto Ignition: NA | Rate of Burning: NA |

- General Fire Hazards:** Inhibitor depletion caused by exposure to heat, radiation or oxidizers can cause spontaneous polymerization generating heat and pressure.
- Hazardous Combustion Products:** Thermal decomposition products can include CO₂, CO, NO_x and smoke.
- Extinguishing Media:** Use water mist, dry chemical, carbon dioxide, or chemical foam. Avoid the use of a stream of water to control fire since frothing can occur.
- Fire Fighting Equipment/Instructions:** Wear full protective clothing, including helmet, self-contained positive-pressure or pressure-demand breathing apparatus, protective clothing and facemask. Move container from area if it can be done without risk. Cool containers with water spray. Do not use high-volume water jet. Avoid inhalation of material or combustion by-products.

VI. ACCIDENTAL RELEASE MEASURES

- Containment Procedures:** Stop the flow of material, if this is without risk. Ventilate contaminated area. Eliminate sources of ignition. Do not release material or contaminated water into drains, soil or surface waters.
- Clean-Up Procedures:** Wear appropriate protective equipment and clothing. Absorb spillage with non-combustible absorbent materials. Place all waste in an appropriate container for disposal.
- Evacuation Procedures:** Keep unnecessary personnel away.
- Special Procedures:** NA

VII. HANDLING AND STORAGE

- Handling Procedures:** Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours or mist.
- Storage Procedures:** 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:** 0 °C – 35 °C / 32 °F – 95 °F

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

No occupational exposure limits have been established.

Engineering Controls

Ventilation must effectively remove any vapors.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face: Wear chemical goggles or face shield.

Skin: Use impervious gloves and apron.

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

General: An eye wash fountain and safety shower are recommended.

IX. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------------------|--------------------------|-----------------------------|---------------------------------|
| Appearance | Blue colored soft solid | Odor | Acrylate |
| Physical State..... | Soft solid to paste | PH | NA |
| Vapor Pressure | NA | Vapor Density..... | NA |
| Boiling Point | NA | Melting/Freezing Point..... | 55 °C – 65 °C (131 °F – 149 °F) |
| Solubility (H ₂ O) | Insoluble @ 20°C (68 °F) | Specific Gravity | 1 – 1.05 |
| Percent Volatile | NA | Molecular Weight..... | NA |

X. CHEMICAL STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of handling, use and transportation.

Conditions to Avoid: Avoid exposure to heat, sunlight and UV light.

Incompatibility: Oxidizing materials, strong acids and strong bases.

Hazardous Decomposition: Thermal decomposition products can include CO₂, CO, NO_x, and smoke.

Hazardous Polymerization: Can occur, see sections III and V.

XI. TOXICOLOGICAL INFORMATION**Acute and Chronic Toxicity**

A: General Product Information: No data available.

B: Component Analysis - LD₅₀/LC₅₀:

| Component | Oral LD ₅₀ | Dermal LD ₅₀ | Inhalation LC ₅₀ | Irritation | Sensitization |
|---|-----------------------|-------------------------|--------------------------------|---|--------------------------|
| Triethylene glycol dimethacrylate ester | 4.49 mg/Kg (rats) | >2.0 mL/Kg (rabbits) | 2 mg/L (rats) | Minimally irritating to eyes and skin (rabbits) | Sensitizer (guinea pigs) |
| Polypropylene Glycol Monomethacrylate | 29.1 mg/Kg (rat) | 20 mL/Kg (rabbit) | >5000 mg/m ³ (rats) | Irritating to eyes (rabbits) | No data |
| Urethane acrylate resin | No data | | | | |

Carcinogenicity

A: General Product Information: None.

B: Component Carcinogenicity: None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP

XII. ECOLOGICAL INFORMATION**Ecotoxicity**

A: General Product Information: The ecological assessment of this material is based on an evaluation of its components. This product is toxic to aquatic organisms and could cause long-term adverse effects in the aquatic environment.

Safety Data Sheet

Material Name: VisiJet HR 200 Plastic Material

B: Component Analysis - Ecotoxicity - Aquatic Toxicity: The urethane acrylate in this product is toxic to aquatic organisms and could cause long-term adverse effects in the aquatic environment.

Environmental Fate: No information available for product.

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Instructions

Do not contaminate drains, soil or surface waters with the material or its container. Avoid disposal. Attempt to utilize product completely. Dispose of in compliance with all applicable regulations. Prior to disposal of unused material, consult an approved waste disposal operative to ensure regulatory compliance.

XIV. TRANSPORT INFORMATION

| | US DOT | RID/ADR | IMDG | IATA | IMO | Canada TDG |
|----------------|---------------|---------|------|------|-----|------------|
| Shipping Name | Not Regulated | | | | | |
| Hazard Class: | | | | | | |
| UN Number: | | | | | | |
| Packing Group: | | | | | | |

XV. REGULATORY INFORMATION

European Union Regulatory Information

General Product Information

| | |
|-----------|---|
| Xi | Irritant |
| 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. |
| S23 | Do not breathe fumes/vapour. |
| S24/25 | Avoid contact with skin and eyes. |
| S61 | Avoid release to the environment. Refer to special instructions/safety data sheets. |

Component Analysis - Inventory

| Component/CAS | EC # | EEC | CAN | TSCA | NLP |
|---|-------------|--------|-----|------|-----|
| Triethylene glycol dimethacrylate ester (CAS# 109-16-0) | 203-652-6 | EINECS | DSL | Yes | No |
| Polypropylene glycol monomethacrylate (CAS# 1310-58-3) | Polymer | EINECS | DSL | Yes | No |
| Urethane acrylate resin mixture | -- | -- | -- | -- | -- |
| Reactive monomer | Polymer | EINECS | DSL | Yes | No |
| Urethane acrylate polymer | proprietary | EINECS | DSL | Yes | No |

XVI. ADDITIONAL INFORMATION

Full text of all Risk Phrases in Sections 2 & 3

Triethylene glycol dimethacrylate ester (CAS# 109-16-0 EC# 203-652-6)

| | |
|--------|--|
| Xi | Irritant |
| R36/38 | Irritating to eyes and skin. |
| R43 | May cause sensitization by skin contact. |

Reactive monomer (CAS#/EC# proprietary)

| | |
|-----------|---|
| N | Dangerous for the environment |
| R36/37/38 | Irritating to eyes, respiratory system and skin. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

Polypropylene Glycol Monomethacrylate (CAS# 39420-45-6)

| | |
|--------|------------------------------|
| Xi | Irritant |
| R36/38 | Irritating to eyes and skin. |

Safety Data Sheet

Material Name: VisiJet HR 200 Plastic Material

Product

| | |
|-----------|---|
| Xi | Irritant |
| 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. |

MSDS Creation Date: June 13, 2005

MSDS Revision #:

MSDS Revision Date:

Reason for Revision:

For more information: www.3dsystems.com

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Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

CPR = Controlled Products Regulations

DOT = Department of Transportation

DSL = Domestic Substances List

EINECS = European Inventory of Existing Commercial Chemical Substances

EPA = Environmental Protection Agency

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IDL = Ingredients Disclosure List

mg/Kg = milligrams per Kilogram

mg/L = milligrams per Liter

mg/m³ = milligrams per Cubic Meter

MSHA = Mine Safety and Health Administration

NA = Not Applicable or Not Available

NIOSH = National Institute for Occupational Safety and Health

NJTSR = New Jersey Trade Secret Registry

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Administration

SARA = Superfund Amendments and Reauthorization Act

STEL = Short Term Exposure Limit

TDG = Transport Dangerous Goods

TSCA = Toxic Substances Control Act

WHMIS = Workplace Hazardous Materials Information System.