

Material Safety Data Sheet

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Material Name: VisiJet HR 200 Plastic Material

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

Manufacturer:



Manufacturer Contact	3D Systems, Inc. 26081 Avenue Hall Valencia, CA 91355 U.S.A.
For Information	Phone: 970.257.4700 or Toll-free Phone: 800.793.3669
Emergency	800.424.9300 - Chemtrec

Hazardous Materials Identification System (HMIS):

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

Health 2
Flammability 1
Physical Hazards 1

Personal Protection:

Skin, eye protection

II. COMPOSITION INFORMATION

CAS #	Component	Percent
109-16-0	Triethylene glycol dimethacrylate ester	45% – 55%
--	Urethane acrylate polymer	35% – 45%
39420-45-6	Polypropylene Glycol Monomethacrylate	1% – 5%

Product Information

This product is considered to be hazardous (irritant, sensitizer) according to 29CFR 1910.1200 (Hazard Communication Standard).

III. HAZARDS IDENTIFICATION

Emergency Overview

This product is irritating to the eyes, respiratory tract and skin. Avoid contact with eyes and skin. Do not breathe fumes or spray. Inhibitor depletion caused by exposure to heat, radiation or oxidizers can cause spontaneous polymerization generating heat and pressure.

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

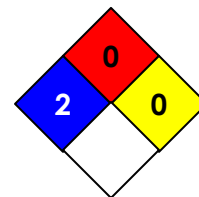
Method Used: NA

Upper Flammable Limit (UFL): NA

Lower Flammable Limit (LFL): NA

Auto Ignition: NA

Rate of Burning: NA



NFPA Ratings

0 = Minimal

1 = Slight

2 = Moderate

3 = Serious

4 = Severe

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 vapors 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 CO ₂ , 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: No data available.

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.

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.

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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

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

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	Polymer	EINECS	DSL	Yes	No

XVI. ADDITIONAL INFORMATION

MSDS Creation Date: May 26, 2005

MSDS Revision #:

MSDS Revision Date:

Reason for Revision:

For more information: www.3dsystems.com

800.793.3669 (Toll-free in the US GMT-07:00; N. America, Mon – Fri, 6:00 a.m. to 6 p.m.)

970.257.4700 (Outside the U.S. GMT-07:00; N. America, Mon – Fri, 6:00 a.m. to 6 p.m.)

+49 (0) 6151 357-357 (Europe GMT+01:00; Mon – Fri, 08:00 a.m. - 17:00 p.m. MEZ)

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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.