

Material Safety Data Sheet

Material Name: Objet RGD531

ID: 06152US_B2

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Name: Objet RGD531

Manufacturer Information

Objet, Inc.
5 Fortune Drive
Billerica, MA 01821
E-mail: objet-info@stratasys.com, www.stratasys.com
Phone: 1-877-489-9449

24 Hour Emergency Telephone Service

+49 722 97772280 - Europe - Multi lingual response
+49 722 97772281 - Global - English Language response
+1 978 495 5580 - USA - Multi lingual response
+85 2 975 70887 - Asia Pacific - Multi lingual response
+61 2 8011 4763 - Australia - Multi lingual response
+86 15626070595 - China - Chinese response

Chemical Family

Mixture of acrylic monomers and oligomers

Product Use

Ink cartridge, For industrial use only.

Section 2 - HAZARDS IDENTIFICATION

NFPA Ratings: Health: 2 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Overview

This product is considered to be an article according to 29 CFR 1910.1200 (OSHA Hazard Communication Standard) and the Canadian Controlled Product Regulations. While no specific safety information is required for articles, this Material Safety Data Sheet is provided for informational purposes. As manufactured and supplied, the Objet ink cartridge is not hazardous under normal conditions of use. While unlikely, uncured ink may leak from damaged ink cartridges and cause eye irritation. Uncured ink may cause an allergic response in sensitized individuals. The liquid within the cartridges is considered hazardous, and the MSDS has been prepared in case of exposure to the liquid.

EMERGENCY OVERVIEW

Color: white
Physical Form: article containing liquid
Odor: characteristic odor
Health Hazards: eye irritation, allergic reactions

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: Not a likely route of exposure.
Long Term: Not a likely route of exposure.

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Skin

Short Term: irritation, tingling sensation, allergic reactions
Long Term: allergic reactions

Eye

Short Term: irritation, tearing, eye damage
Long Term: irritation

Ingestion

Short Term: Not a likely route of exposure.
Long Term: Not a likely route of exposure.

*****Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS*****

CAS	Component	Percent
Proprietary	Acrylic monomer	25-35
Proprietary	Acrylic monomer	20-30
Proprietary	Urethane Acrylate Oligomer	10-20
Proprietary	Urethanacrylate oligomer	10-20
Proprietary	Isobornyl acrylate	5-10
Proprietary	Acrylic monomer	5-10
Proprietary	Photoinitiator	0.1-2
Proprietary	Polyether modified dimethylpolysiloxane	<0.1
Proprietary	Acrylic acid ester	<0.1

*****Section 4 - FIRST AID MEASURES*****

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing before reuse. If product polymerizes and adheres to skin, DO NOT attempt to remove. Get immediate medical attention.

Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if the skin or eyes become bonded. Do not apply neutralizing agents. Get medical attention if irritation develops or persists.

Ingestion

If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious or convulsive person. Get medical attention.

Note to Physicians

If adverse effects occur, treat symptomatically and supportively.

*****Section 5 - FIRE FIGHTING MEASURES*****

See Section 9 for Flammability Properties

Flammable Properties

Slight fire hazard.

Extinguishing Media

carbon dioxide, regular dry chemical, foam, water spray

Unsuitable Extinguishing Media

high-pressure water streams

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Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Keep unnecessary people away, isolate hazard area and deny entry. Keep out of water supplies and sewers. Avoid inhalation of material or combustion by-products.

Hazardous Combustion Products

Combustion: amines, hydrogen cyanide, isocyanates, oxides of carbon, oxides of nitrogen, oxides of phosphorus, Releases toxic and corrosive gases.

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

Section 6 - ACCIDENTAL RELEASE MEASURES

Occupational spill/release

Intact cartridges do not pose a leak or spill hazard. Damaged cartridges may leak uncured ink. Stop leak if possible without personal risk. Reduce vapors with water spray. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers.

Personal Precautions

See Section 8 for personal protection information.

Environmental Precautions

Do not allow the spilled product to enter public drainage system or open water courses.

Containment Procedures

Intact cartridges do not pose a leak or spill hazard. Damaged cartridges may leak uncured ink. Stop the flow of material.

Cleanup Methods

Collect spilled material. Collect spilled cartridge contents with an inert absorbent such as sand or vermiculite. Place in properly labeled closed container. Flush area with water to remove trace residue.

Evacuation Procedures

No special requirements.

Special Procedures

Contact local regulatory authorities for advice regarding disposal of cleanup materials.

Section 7 - HANDLING AND STORAGE

Handling Procedures

Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Contaminated clothing should be removed and laundered before reuse. Avoid discharge into drains, surface water or groundwater.

Storage Procedures

Store in accordance with all current regulations and standards. Store in a combustible storage area away from heat and open flame. Store between 59 F and 77 F (15 C and 25 C). Shipment temperature (up to 3 weeks) is -4 F to 122 F (-20°C to 50 °C). Store in a cool, dry place. Avoid direct sunlight. Keep container tightly closed and in a well-ventilated place. Keep in the dark. Keep separated from incompatible substances.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

ACGIH, NIOSH, EU, OSHA (US) and Mexico have not developed exposure limits for any of this product's components.

Ventilation

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Eye protection not required under normal conditions. Chemical goggles or safety glasses with side shields should be worn when handling a damaged cartridge.

Protective Clothing

Protective clothing is not required under normal conditions. Wear neoprene or nitrile impervious gloves when handling damaged cartridge. Wash contaminated clothing before reuse.

Glove Recommendations

Wear neoprene or nitrile impervious gloves when handling damaged cartridge.

Respiratory Protection

Respiratory protection is not generally needed when using this product.

Where vapor concentration exceeds or is likely to exceed applicable exposure limits, a NIOSH approved respirator is required.

General

Use in accordance with good industrial hygiene practices.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Appearance:	ink cartridge, contents are white liquid
Color:	white	Physical Form:	article containing liquid
Odor:	characteristic odor	Odor Threshold:	Not available
pH:	Not applicable	Melting Point:	Not available
Boiling Point:	Not available	Decomposition:	Not available
Flash Point:	>100 °C	Evaporation Rate:	Not available
Vapor Pressure:	Not available	Vapor Density (air = 1):	Not available
Density:	Not available	Specific Gravity (water = 1):	Not available
Water Solubility:	insoluble	Coeff. Water/Oil Dist:	Not available
Viscosity:	13-14 cps	Volatility:	Not available

Section 10 - STABILITY AND REACTIVITY

Chemical Stability

Unstable on exposure to light. Unstable on exposure to heat.

Conditions to Avoid

Avoid exposure to heat and light.

Materials to Avoid

Not applicable under normal conditions of use and storage.

Decomposition Products

low molecular weight hydrocarbons, oxides of carbon, oxides of nitrogen, oxides of phosphorus

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Hazardous Decomposition

Combustion: amines, hydrogen cyanide, isocyanates, oxides of carbon, oxides of nitrogen, oxides of phosphorus, Releases toxic and corrosive gases.

Possibility of Hazardous Reactions

Uncured ink will polymerize on exposure to light.

Section 11 - TOXICOLOGICAL INFORMATION

No hazard is expected from the normal use of this product. While unlikely, uncured ink may leak from damaged ink cartridges and cause skin and eye irritation. After skin contact: tingling or irritation of the skin. After eye contact: irritation, inflammation or damage of the eye tissue.

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Isobornyl acrylate (Proprietary)

Oral LD50 Rat 4890 mg/kg; Dermal LD50 Rabbit >5 g/kg

Polyether modified dimethylpolysiloxane (Proprietary)

Inhalation LC50 Rat >12.7 mg/kg 4 h; Inhalation LC50 Rat >17.6 mg/L 1 h; Oral LD50 Rat 1540 mg/kg; Dermal LD50 Rat >2400 mg/kg; Dermal LD50 Rabbit >4640 mg/kg; Dermal LD50 Rabbit 794 µL/kg

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

Irritation

Contact with uncured ink may cause eye and skin irritation.

Medical Conditions Aggravated by Exposure

None known.

Tumorigenic

No data available for the mixture.

Mutagenic

No data available for the mixture.

Reproductive Effects

No data available for the mixture.

Additional Data

Uncured ink may polymerize and adhere to tissue.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

Data may be available for the product or its components (if applicable, see below).

Polyether modified dimethylpolysiloxane (Proprietary)

Fish: 96 Hr LC50 Brachydanio rerio: >500 mg/L; 96 Hr LC50 Lepomis macrochirus: >1000 mg/L

Invertebrate: 24 Hr EC50 Daphnia magna: 25.2 mg/L

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

General Product Information

No information available for the product.

Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

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Disposal Instructions

Refer to manufacturer/supplier for information on recovery/recycling. Do not landfill. Avoid discharge into drains or surface water. See Section 7 for handling procedures. See Section 8 for personal protection information.

Section 14 - TRANSPORT INFORMATION

US DOT Information

Not regulated.

TDG Information

Not regulated.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Acrylic monomer (Proprietary)

TSCA 12b: Section 5, 1 % de minimus concentration EPA: P-95-0169

SARA 311/312

Acute Health: Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactive:** No

U.S. State Regulations

None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA.

Not regulated under California Proposition 65

Canada

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS Classification

This product is considered an article; therefore, there are no significant adverse effects when used as directed. Should the product break or leak, the contents of the cartridge would be classified as the following: D2B.

Canadian WHMIS Ingredient Disclosure List (IDL)

No components are listed in the WHMIS IDL.

Canadian Inventory

All components of this product are listed on either the DSL or the NDSL.

U.S. Inventory (TSCA)

All the components of this substance are listed on or are exempt from the inventory.

Component Analysis - Inventory

Component	CAS	US	CA
Acrylic monomer	Proprietary	Yes	DSL
Acrylic monomer	Proprietary	Yes	NSL
Isobornyl acrylate	Proprietary	Yes	DSL
Acrylic monomer	Proprietary	Yes	DSL
Photoinitiator	Proprietary	Yes	DSL
Polyether modified dimethylpolysiloxane	Proprietary	Yes	DSL
Acrylic acid ester	Proprietary	Yes	DSL

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*****Section 16 - OTHER INFORMATION*****

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DSL - Domestic Substances List; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; NFPA - National Fire Protection Agency; IARC - International Agency for Research on Cancer; NIOSH - National Institute for Occupational Safety and Health; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; SARA - Superfund Amendments and Reauthorization Act; TSCA - Toxic Substances Control Act

Other Information

Reasonable care has been taken in the preparation of this information; however, the manufacturer makes no warranty whatsoever including the warranty of merchantability, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental, consequential, or other such damages resulting from its use or misuse.

New MSDS: 22-03-2012

End of Sheet