

*****Section 1 - IDENTIFICATION*******Material Name:** RGD535**Chemical Family**

acrylic compounds

Recommended Use

This product is a cartridge containing ink. Under normal conditions of use, the substance is released from a cartridge only inside an appropriate printing system, and therefore, exposure is limited.

Restrictions on Use

None known.

Manufacturer Information

Stratasys, Inc.
5 Fortune Drive
Billerica, MA 01821
E-mail: info@stratasys.com, www.stratasys.com

Phone: 1-877-489-9449

Emergency # +1 978 495 5580

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

*****Section 2 - HAZARDS IDENTIFICATION*******Classification in accordance with 29 CFR 1910.1200**

Acute Toxicity (Oral), Category 4
Skin Corrosion / Irritation, Category 2
Eye Damage / Irritation, Category 1
Skin sensitizer, Category 1
Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory system)
Specific Target Organ Toxicity - Repeated Exposure, Category 2
Hazardous to the Aquatic Environment - Chronic Hazard, Category 2

GHS LABEL ELEMENTS**Symbol(s)**

Signal Word

DANGER

Hazard Statement(s)

Harmful if swallowed
 Causes skin irritation
 Causes serious eye damage
 May cause an allergic skin reaction
 May cause respiratory irritation
 May cause damage to organs through prolonged or repeated exposure
 Toxic to aquatic life with long lasting effects

Precautionary Statement(s)**Prevention**

Do not breathe vapor or mist. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response

Get medical advice/attention if you feel unwell. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose in accordance with all applicable regulations.

Hazard(s) Not Otherwise Classified

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent
--	Morpholine, 4-(1-oxo-2-propenyl)-	<30
--	2-Propenoic acid, 2-methyl-, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, exo-	<15
5888-33-5	Exo-1,7,7-Trimethylbicyclo [2.2.1]hept-2-yl acrylate	<15
--	Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)-	<2
13463-67-7	Titanium dioxide	<0.8
52408-84-1	Acrylic acid ester	<0.3

Additional Information

Under normal conditions of use, the substance is released from a cartridge only inside an appropriate printing system, and therefore, exposure is limited. The liquid within the cartridges is considered hazardous, and the SDS has been prepared in case of exposure to the liquid.

TITANIUM DIOXIDE is present in a low concentration, dispersed in a liquid.

*****Section 4 - FIRST AID MEASURES*******Description of Necessary Measures****Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Most Important Symptoms/Effects**Acute**

respiratory tract irritation, eye damage, skin irritation, allergic skin reaction

Delayed

allergic reactions

Indication of Immediate Medical Attention and Special Treatment

If adverse effects occur, treat symptomatically and supportively.

*****Section 5 - FIRE FIGHTING MEASURES*******Suitable Extinguishing Media**

Use extinguishing agents appropriate for surrounding fire. Class B fires: Use carbon dioxide (CO₂), regular dry chemical (sodium bicarbonate), regular form (Aqueous Film Forming Foam-AFFF), or water spray to cool containers.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Chemical

Slight fire hazard.

Hazardous Combustion Products

Combustion: oxides of carbon

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.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure. Avoid inhalation of material or combustion by-products.

*****Section 6 - ACCIDENTAL RELEASE MEASURES*******Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Collect spilled material with an inert absorbent such as sand or vermiculite. Place in properly labeled closed container.

*****Section 7 - HANDLING AND STORAGE*****

Precautions for Safe Handling

Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Avoid release to the environment.

Conditions for Safe Storage, including any Incompatibilities

Store in accordance with all current regulations and standards. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store between 15 °C and 25 °C. Shipment temperature (up to 5 weeks) is -20 °C to 50 °C. Store in a combustible storage area away from heat and open flame. Store in a cool, dry place. Avoid direct sunlight. Keep in the dark. Keep separated from incompatible substances.

Incompatibilities Not applicable under normal conditions of use and storage.

*****Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION*****

Component Exposure Limits

Titanium dioxide (13463-67-7)

- ACGIH:** 10 mg/m3 TWA
- NIOSH:** 5000 mg/m3 IDLH
- OSHA (US):** 15 mg/m3 TWA (total dust)
- Mexico:** 10 mg/m3 TWA LMPE-PPT (as Ti)
20 mg/m3 STEL [LMPE-CT] (as Ti)

Component Analysis

There are no biological limit values for any of this product's components.

Appropriate Engineering Controls

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

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

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

Skin Protection

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.

*****Section 9 - PHYSICAL AND CHEMICAL PROPERTIES*****

Physical State:	Liquid	Appearance:	ink cartridge containing green liquid ink
Color:	green	Physical Form:	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
LEL:	Not available	UEL:	Not available
Vapor Pressure:	Not available	Vapor Density (air = 1):	Not available
Density:	Not available	Specific Gravity (water = 1):	Not available

Water Solubility:	Not available	Coeff. Water/Oil Dist:	Not available
Auto Ignition:	Not available	Viscosity:	Not available
Volatility:	Not available		

*****Section 10 - STABILITY AND REACTIVITY*****

Reactivity

No reactivity hazard is expected.

Chemical Stability

Store between 15 °C and 25 °C. Uncured ink will polymerize on exposure to light or heat rendering the product unusable. However, this reaction is not considered hazardous.

Possibility of Hazardous Reactions

Uncured ink will polymerize on exposure to light.

Conditions to Avoid

Avoid exposure to heat and light.

Incompatible Materials

Not applicable under normal conditions of use and storage.

Hazardous Decomposition

Combustion: oxides of carbon

*****Section 11 - TOXICOLOGICAL INFORMATION*****

Acute and Chronic Toxicity

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. Contact with skin may cause tingling sensation or skin irritation. Contact with eyes may cause eye irritation, inflammation, or eye damage.

Component Analysis - LD50/LC50

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

Titanium dioxide (13463-67-7)

Oral LD50 Rat >10000 mg/kg

Acute Toxicity Level**2-Propenoic acid, 2-methyl-, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, exo- (7534-94-3)**

Moderately Toxic: ingestion

Titanium dioxide (13463-67-7)

Moderately Toxic: inhalation

Slightly Toxic: ingestion

Information on Likely Routes of Exposure**Inhalation**

May cause respiratory irritation

Ingestion

No hazard is expected from the normal use of this product.

Skin Contact

May cause irritation. May cause an allergic skin reaction.

Eye Contact

May cause irritation.

Immediate Effects

respiratory tract irritation, eye damage, skin irritation, allergic skin reaction

Delayed Effects

allergic reactions

Medical Conditions Aggravated by Exposure

None known.

Irritation/Corrosivity Data

Contact with uncured ink may cause eye irritation and skin irritation. Inhalation may cause respiratory tract irritation.

Respiratory Sensitization

No data available for the mixture.

Dermal Sensitization

Component data indicate the substance is sensitizing. Uncured ink may cause an allergic response in sensitized individuals.

Carcinogenicity**Component Carcinogenicity****Titanium dioxide (13463-67-7)****ACGIH:** A4 - Not Classifiable as a Human Carcinogen**IARC:** Monograph 93 [2010]; Monograph 47 [1989] (Group 2B (possibly carcinogenic to humans))**DFG:** Category 3A (could be carcinogenic for man, inhalable fraction with the exception of ultra small particles)**Mutagenic Data**

No data available for the mixture.

Reproductive Effects Data

No data available for the mixture.

Tumorigenic Data

No data available for the mixture.

Additional Data

Uncured ink may polymerize and adhere to tissue.

Specific Target Organ Toxicity - Single Exposure

respiratory system

Specific Target Organ Toxicity - Repeated Exposure

May cause damage to organs through prolonged or repeated exposure

Aspiration Hazard

No data available for the mixture.

*****Section 12 - ECOLOGICAL INFORMATION*******Ecotoxicity**

Harmful to aquatic life with long lasting effects.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility

No data available.

Other Ecological Information

No additional information is available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations.

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 Protective Equipment recommendations.

Component Waste Numbers

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

Section 14 - TRANSPORT INFORMATION

US DOT Information

Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Contains: exo-1,7,7 - trimethylbicyclo (2.2.1) hept - 2 - yl acrylate)

UN/NA #: UN3082 **Hazard Class:** 9 **Packing Group:** III

Required Label(s): 9

IMDG Information

Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Contains: exo-1,7,7 - trimethylbicyclo (2.2.1) hept - 2 - yl acrylate)

UN #: UN3082 **Hazard Class:** 9 **Packing Group:** III

Required Label(s): 9

Section 15 - REGULATORY INFORMATION

Component Analysis**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.

Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)

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

SARA 311/312 Hazardous Categories

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

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Titanium dioxide	13463-67-7	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Canada Regulations

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: D2A, D2B.

Canadian WHMIS Ingredient Disclosure List (IDL)

No components are listed in the WHMIS IDL.

Component Analysis

Component	CAS	TSCA	DSL	NDSL
Morpholine, 4-(1-oxo-2-propenyl)-	--	Yes	No	Yes
2-Propenoic acid, 2-methyl-, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, exo-	--	Yes	Yes	No
Exo-1,7,7-Trimethylbicyclo [2.2.1]hept-2-yl acrylate	5888-33-5	Yes	Yes	No
Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)-	--	Yes	Yes	No
Titanium dioxide	13463-67-7	Yes	Yes	No
Acrylic acid ester	52408-84-1	Yes	Yes	No

* * *Section 16 - OTHER INFORMATION* * *

Summary of Changes

New SDS: 1.000

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

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

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DSL - Domestic Substances List; EIN (EINECS) - European Inventory of Existing Commercial Chemical Substances; ELN (ELINCS) - European List of Notified Chemical Substances; IARC - International Agency for Research on Cancer; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LEL - Lower Explosive Limit; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit

Other Information

The information in this safety data sheet is based on data and samples provided to a third party SDS author. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned in this safety data sheet. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question.

Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. Stratasys does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the license and liability limiting conditions as stated in your license agreement. All intellectual property rights to this sheet are the property of Stratasys and its distribution and reproduction are limited.

End of Sheet DOC-06112US_D