

*****Section 1 - IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING*******1.1 Product Identifier:****Material Name:** RGD535**Chemical Family**

acrylic compounds

Substance Registration Number(s)

The components are either registered, pre-registered or not subject to REACH.

Substance Registration Number(s) : 01-0000016491-73-XXXX (CAS#, 5117-12-4)

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against Identified Uses

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.

Uses Advised Against

None known.

1.3 Details of the supplier of the safety data sheet

Stratasys GmbH

Airport Boulevard B 120

D-77836 Rheinmünster, Germany

Phone: +49 722 97 77 20

Emergency # +49 722 97772280

Email Address

info@stratasys.com; www.stratasys.com

1.4 Emergency Telephone Number

+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 language response)

*****Section 2 - HAZARDS IDENTIFICATION*******2.1 Classification of the Substance or Mixture****Classification according to Regulation (EC) No 1272/2008**

Acute Toxicity (Oral), Category 4

Eye Damage / Irritation, Category 1

Skin Corrosion / Irritation, Category 2

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

2.2 Label Elements

Labeling according to Regulation (EC) 1272/2008/EC:



Signal Word

DANGER

Hazard Statement(s)

H302 Harmful if swallowed.

H318 Causes serious eye damage

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H335 May cause respiratory irritation

H373 May cause damage to organs through prolonged or repeated exposure

H411 Toxic to aquatic life with long lasting effects

Precautionary Statement(s)

Prevention

P271 Use only outdoors or in a well-ventilated area. **P280** Wear protective gloves/protective clothing/eye protection/face protection.

Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P310** Immediately call a POISON CENTER or doctor/physician.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other Hazards

None known.

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

CAS EC No Registration No	Component Synonyms	1272/2008 (CLP)	Percent
-- --	Acrylic monomer	Acute Tox. 4 (Oral) Eye Dam. 1 Skin Sens. 1 STOT RE 2	<30
-- --	Acrylic monomer	Skin Irrit. 2 Eye Irrit. 2 STOT SE 3	<15

5888-33-5 227-561-6 --	Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate	Skin Irrit. 2 Eye Irrit. 2 STOT SE 3 Aquatic Chronic 2	<15
-- --	Photo initiator	Skin Sens. 1 Aquatic Chronic 4	<2
13463-67-7 236-675-5 --	Titanium dioxide		<0.8
52408-84-1 500-114-5 --	Acrylic acid ester	Eye Irrit. 2 Skin Sens. 1	<0.3

Additional Information

The liquid within the cartridges is considered hazardous, and the MSDS 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*******4.1 Description of First Aid 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.

4.2 Most Important Symptoms and Effects, both Acute and Delayed**Acute**

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

Delayed

allergic reactions

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed**Note to Physicians**

No additional information.

*****Section 5 - FIRE FIGHTING MEASURES*******5.1 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.

5.2 Special Hazards Arising from the Substance or Mixture

Slight fire hazard.

Thermal Decomposition Products

Combustion: oxides of carbon

5.3 Advice for Firefighters**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.

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

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.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

6.2 Environmental Precautions

Avoid release to the environment.

6.3 Methods and Material for Containment and Cleaning up

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

6.4 Reference to Other Sections

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations. See Section 13 for Disposal Considerations.

Section 7 - HANDLING AND STORAGE

7.1 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.

7.2 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.

*****Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION*******8.1 Control Parameters****Component Exposure Limits****Titanium dioxide (13463-67-7)**

Austria:	5 mg/m3 TWA (alveolar dust, respirable fraction) 10 mg/m3 STEL (alveolar dust, respirable fraction, 2 X 60 min)
Belgium:	10 mg/m3 TWA
Bulgaria:	10.0 mg/m3 TWA (respirable dust)
Denmark:	6 mg/m3 TWA (as Ti)
Estonia:	5 mg/m3 TWA
France:	10 mg/m3 TWA (as Ti)
Greece:	10 mg/m3 TWA (inhalable fraction); 5 mg/m3 TWA (respirable fraction)
Ireland:	10 mg/m3 TWA (total inhalable dust); 4 mg/m3 TWA (respirable dust)
Latvia:	10 mg/m3 TWA
Lithuania:	5 mg/m3 TWA
Poland:	10.0 mg/m3 TWA (<2% free crystalline silica and containing no asbestos, total inhalable dust)
Portugal:	10 mg/m3 TWA [VLE-MP]
Romania:	15 mg/m3 STEL 10 mg/m3 TWA
Spain:	10 mg/m3 TWA [VLA-ED]
Sweden:	5 mg/m3 LLV (total dust)
United Kingdom:	10 mg/m3 TWA (total inhalable); 4 mg/m3 TWA (respirable) 30 mg/m3 STEL (calculated, total inhalable); 12 mg/m3 STEL (calculated, respirable) 10 mg/m3 TWA

Biological Limit Value**Component Analysis**

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

Derived No Effect Levels (DNELs)

No DNELs available.

Predicted No Effect Concentrations (PNECs)

No PNECs available.

Ventilation

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

8.2 Exposure Controls**Appropriate Engineering Controls****Eye / 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*****
9.1 Information on Basic 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*****
10.1 Reactivity

Heating may cause a fire

10.2 Chemical Stability

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

10.3 Possibility of Hazardous Reactions

Uncured ink will polymerize on exposure to light.

10.4 Conditions to Avoid

Avoid exposure to heat and light.

10.5 Incompatible Materials

Not applicable under normal conditions of use and storage.

10.6 Hazardous Decomposition Products**Thermal Decomposition Products**

Combustion: oxides of carbon

*****Section 11 - TOXICOLOGICAL INFORMATION*****
11.1 Information on Toxicological Effects**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

Irritation / Corrosivity

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.

Skin Sensitization

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

Germ Cell Mutagenicity

No data available for the mixture.

Carcinogenicity

Component Carcinogenicity

Titanium dioxide (13463-67-7)

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)

Reproductive Toxicity

No data available for the mixture.

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* * *

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

12.2 Persistence and Degradability

No data available for the mixture.

12.3 Bioaccumulative Potential

No data available for the mixture.

12.4 Mobility in Soil

No data available for the mixture.

12.5 Results of PBT and vPvB Assessment

No information available.

EU - Interim Strategy for Management of PBT and vPvB Substances (PBT Assessments)

No components of this material are listed.

12.6 Other Adverse Effects

No information available.

*****Section 13 - DISPOSAL CONSIDERATIONS*****

13.1 Waste Treatment Methods

Dispose in accordance with all applicable regulations. Hazardous Waste Number(s): 08 03 12*
 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.

*****Section 14 - TRANSPORT INFORMATION*****

Transportation

*****Section 14 - TRANSPORT INFORMATION*****

	ADR	RID	ICAO	ADN	IMDG
14. UN	3082	3082	3082	3082	3082
14. UN	Environmental	Environmental	Environmental	Environmental	Environmental
Name	ly hazardous substance, liquid,	ly hazardous substance, liquid,	ly hazardous substance, liquid,	ly hazardous substance, liquid,	ly hazardous substance,
	n.o.s. (Contains: Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate)	n.o.s. (Contains: Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate)	n.o.s. (Contains: Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate)	n.o.s. (Contains: Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate)	n.o.s. (Contains: Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate)
14. Transportor Class(es)	Hazard Class: 9	Hazard Class: 9	Hazard Class: 9	Hazard Class: 9	Hazard Class: 9



14.4	Packing Group	Packing Group: III	Packing Group: III	Packing Group: III	Packing Group: III	Packing Group: III
14.5	Environmental Hazards	Marine Pollutant	Marine Pollutant	Marine Pollutant	Marine Pollutant	Marine Pollutant
14.6	Special Precautions For User	Classification Code : M6	Classification Code : M6	Passenger and Cargo aircraft - Packaging Instructions : Y964/964	Classification Code : M6	EMS: F-A, S-F
14.7	Transport in Bulk According to Annex II					

Safety Data Sheet

Material Name: RGD535

MSDS ID: DOC-06112_C

In Compliance with Regulation (EC) 1907/2006 (REACH) as Amended

or MARPOL 73/78 and
the IBC Code

International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Titanium dioxide (13463-67-7)

IBC Code: Category Z (slurry)

Phosphoric acid (7664-38-2)

IBC Code: Category Z

Propylene glycol monomethyl ether acetate (108-65-6)

IBC Code: Category Z

*****Section 15 - REGULATORY INFORMATION*******15.1 Safety, Health and Environmental Regulations / Legislation Specific for the Substance or Mixture****EU - REACH (1907/2006) - Annex XIV List of Substances Subject to Authorisation**

No components of this material are listed.

EU - REACH (1907/2006) - Article 59(1) Candidate List of Substances for Eventual Inclusion in Annex XIV

No components of this material are listed.

EU - REACH (1907/2006) - Annex XVII Restrictions of Certain Dangerous Substances, Mixtures and Articles

No components of this material are listed.

Germany Regulations**Germany Water Classification****Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)**

ID Number 6697, hazard class 2 - hazard to waters

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

ID Number 2349, hazard class 2 - hazard to waters

Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate (5888-33-5)

ID Number 2247, hazard class 2 - hazard to waters

Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)- (162881-26-7)

ID Number 2126, hazard class 1 - low hazard to waters

Titanium dioxide (13463-67-7)

ID Number 1345, not considered hazardous to water

Denmark Regulations**Environmental Protection Agency List of Undesirable Substances**

No components of this material are listed.

EU Inventory

Substance Analysis - Inventory

Component	CAS	EEC
Acrylic monomer	--	ELN
Acrylic monomer	--	EIN
Exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	EIN
Photo initiator	--	ELN
Titanium dioxide	13463-67-7	EIN
Acrylic acid ester	52408-84-1	NLP

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out for the substance/mixture.

* * *Section 16 - OTHER INFORMATION* * *
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16.1 Indication of changes

New MSDS: 2/5/2013

16.2 Key / Legend

ADR - European Road Transport; EEC - European Economic Community; EIN (EINECS) - European Inventory of Existing Commercial Chemical Substances; ELN (ELINCS) - European List of Notified Chemical Substances; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LEL - Lower Explosive Limit; RID - European Rail Transport; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TWA - Time Weighted Average; UEL - Upper Explosive Limit

16.3 Key literature references and sources for data

Available upon request

16.4 Methods used for classification of mixture according to Regulation (EC) No 1272/2008

Available upon request

16.5 Training Advice

Read the Safety Data Sheet before handling product.

16.6 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.



Safety Data Sheet

Material Name: RGD535

MSDS ID: DOC-06112_C

In Compliance with Regulation (EC) 1907/2006 (REACH) as Amended

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-06112_C