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STRATASYS REVISION: A

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Product Code(s) SDS-06135
Product Name MED610 Biocompatible, Clear
Chemical name Acrylic formulation

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Printing inks
Uses advised against 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

1.3. Details of the supplier of the safety data sheet**Importer**

Stratasys GMBH
Airport Boulevard B 120
77836 Rheinmünster, Germany

For further information, please contact

Company Phone Number +49 722 97 77 20
E-mail address info@Stratasys.com

1.4. Emergency telephone number

Emergency Telephone

- +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**2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Acute toxicity - Oral	Category 4 - (H302)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitization	Category 1B - (H317)

Specific target organ toxicity (single exposure)	Category 3 - (H335)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Acute aquatic toxicity	Category 1 - (H400)
Chronic aquatic toxicity	Category 1 - (H410)

2.2. Label elements

Contains 2-Hydroxy-3-phenoxypropyl acrylate, 4-(1-oxo-2propenyl) morpholine, Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, TRICYCLODECANE DIMETHANOL DIACRYLATE, Bisphenol A epoxy acrylate oligomer, 2, 4, 6 - trimethylbenzoyldiphenylphosphine oxide



Signal word
Danger

Hazard statements

- H302 - Harmful if swallowed
- H315 - Causes skin irritation
- H318 - Causes serious eye damage
- H317 - May cause an allergic skin reaction
- H335 - May cause respiratory irritation
- H373 - May cause damage to organs through prolonged or repeated exposure
- H410 - Very toxic to aquatic life with long lasting effects
- EUH208 - Contains Genorad 20 May produce an allergic reaction.

Precautionary Statements - EU (§28, 1272/2008)

- 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
- P280 - Wear eye protection/ face protection
- P314 - Get medical advice/attention if you feel unwell
- P501 - Dispose of contents/container to industrial incineration plant
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Additional information

This product requires tactile warnings if supplied to the general public

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	EC No.	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	227-561-6	5888-33-5	20 - 30	Acute Tox. 5 (H303) Acute Tox. 5 (H313) Skin Sens. 1 (H317) Resp. Sens. 3 (H335) Aquatic Chronic 1 (H410)	01-2119957862-25-0001
Proprietary	Listed	-	20 - 30	Acute Tox. 4 (H302)	01-0000016491-73

				Eye Dam. 1 (H318) Skin Sens. 1 (H317) STOT RE 2 (H373)	-0000
Proprietary	Listed	-	10 - 20	Skin Sens. 1 (H317)	No data available
TRICYCLODECANE DIMETHANOL DIACRYLATE	255-901-3	42594-17-2	5 - 10	Skin Sens. 1 (H317) Aquatic Chronic 2 (H411)	01-2120051112-76 -0000
Proprietary	Not Listed	-	5 - 10	Acute Tox. 5 (H303) Acute Tox. 5 (H313) Skin Sens. 1 (H317) Aquatic Chronic 2 (H411)	No data available
Proprietary	Listed	-	1 - 5	Repr. 2 (H361f) Skin Sens. 1B (H317) Aquatic Chronic 2 (H411)	01-2119972295-29 -0000
Proprietary	Not Listed	-	0.1 - 1	Aquatic Chronic 2 (H411) Skin Sens. 1 (H317) Eye Irrit. 2A (H319)	No data available

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	No information available.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media	Class B fires: Use carbon dioxide (CO ₂), regular dry chemical (sodium bicarbonate), regular foam (Aqueous Film Forming Foam-AFFF), or water spray to cool containers Use extinguishing agent suitable for type of surrounding fire
Unsuitable extinguishing media	No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	No information available.
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5.3. Advice for firefighters**Special protective equipment for fire-fighters**

Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Keep out of drains, sewers, ditches and waterways. Inhalation is a health risk. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures**Personal precautions**

Ensure adequate ventilation.

Occupational Spill Release

Intact cartridges do not pose a leak or spill hazard. Damaged cartridges may leak uncured ink. Stop leak if you can do it without risk Use water spray to reduce vapors or divert vapor cloud drift Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container Keep out of drains, sewers, ditches and waterways

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions**Environmental precautions**

See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up**Methods for containment**

Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Methods for cleaning up

Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections**Reference to other sections**

See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling**Advice on safe handling**

Avoid breathing vapors or mists. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. 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. Avoid release to the environment. Do not eat, drink or smoke when using this product.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities**Storage Conditions**

Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Store in a cool, well ventilated area. Store in accordance with local regulations.

Store locked up. Keep container tightly closed. Store between 15 °C and 27 °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.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure disclaimer Personal protection measures are only needed if cartridge is damaged punctured causing spillage of material

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid
Appearance	Ink cartridge
Odor	Characteristic.
Color	Bluish clear
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known

Flash point	> 100 °C	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Reactivity Heating may cause a fire.

10.2. Chemical stability

Stability Decomposes on exposure to light. Unstable if heated.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Uncured ink will polymerize on exposure to light.

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to heat and light.

10.5. Incompatible materials

Incompatible materials Not applicable under normal conditions of use and storage.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal Decomposition Products. Combustion: oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Information on toxicological effects

Symptoms No information available.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1,314.00 mg/kg
ATEmix (dermal)	2,266.00 mg/kg
ATEmix (inhalation-dust/mist)	5.77 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	= 4890 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	
Proprietary	588 mg/kg (rat)	> 2000 mg/kg (rat)	5.28 mg/l (rat)
Proprietary	(Rat) LD50 = 1,590 - 3,910 mg/kg	(Rabbit) LD50 = > 2,000 mg/kg	(Rat) 1 h LC0 = 6.7 mg/l
TRICYCLODECANE DIMETHANOL DIACRYLATE	2.000 mg/kg (Rat) (Method: OECD Test Guideline 423)	2.000 mg/kg (Rat)(Method: OECD Test Guideline 402)	
Proprietary	>2000 mg/kg (Rat)	>2000 mg/kg	
Proprietary	> 5,000 mg/kg (Rat) (OECD Guideline 401)	> 2,000 mg/kg (Rat) (OECD Guideline 402)	

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.

Chemical name	European Union
Proprietary	Repr. 2

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity Contains 24.264 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Exo-1,7,7-trimethylbicyclo [2.2.1]hept-2-yl acrylate	1.98 mg/l Fresh water	0.704 mg/l Fresh water	-	0.524 mg/l Fresh water
Proprietary	120 mg/l (algae)	-	-	120 mg/kg (daphnia)
Proprietary	Pseudokirchneriella subcapitata (green algae) 96 h EC50 = 0.17 mg/l	Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 27 mg/l	-	Daphnia magna (Water flea) 48 h EC50 = 95 mg/l
TRICYCLODECANE DIMETHANOL DIACRYLATE	(Pseudokirchneriella subcapitata) : 1,6 mg/l (Method: OECD Test Guideline 201)	(Fish) : 4,95 mg/l	-	(Daphnia magna Straus) : 2,36 mg/l (Method: OECD Test Guideline 202)
Proprietary	> 2.01 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)	6.53 mg/l, Oryzias latipes (JIS K 0102-71, semistatic)	-	3.53 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
Waste codes / waste designations according to EWC / AVV	08 03 12* Waste ink containing dangerous substances.

Section 14: TRANSPORT INFORMATION

Additional Info The environmentally hazardous substance mark is not required when transported in sizes of ≤5L or ≤5kg
 The marine pollutant mark is not required when transported in sizes of ≤5L or ≤5kg

IMDG

14.1 UN/ID no.	UN3082
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate)
14.3 Hazard Class	9
14.4 Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III
14.5 Marine pollutant Environmental hazard	Not applicable Yes
14.6 Special Provisions EmS-No.	274, 335 F-A, S-F
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID

14.1 UN/ID no.	UN3082
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate)
14.3 Hazard Class	9
Labels	9
14.4 Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III
14.5 Environmental hazard	Yes
14.6 Special Provisions	None
Classification code	M6

ADR

14.1 UN/ID no.	UN3082
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate)
14.3 Hazard Class	9
Labels	9
14.4 Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III
14.5 Environmental hazard	Yes
14.6 Special Provisions	274, 335, 601, 375
Classification code	M6
Tunnel restriction code	(E)

IATA

14.1 UN/ID no.	UN3082
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate)
14.3 Hazard Class	9
14.4 Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III
14.5 Environmental hazard	Yes
14.6 Special Provisions	None



Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

E1 - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H411 - Toxic to aquatic life with long lasting effects

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

- H302 - Harmful if swallowed
- H318 - Causes serious eye damage
- H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
- H303 - May be harmful if swallowed
- H313 - May be harmful in contact with skin
- H335 - May cause respiratory irritation
- H410 - Very toxic to aquatic life with long lasting effects
- H361f - Suspected of damaging fertility

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)
 Ceiling Maximum limit value * Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method

Revision Date 02-Mar-2016

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet