

SAFETY DATA SHEET

Issuing Date 12-Dec-2017 Revision Date 08-Nov-2017 Revision F

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name VeroBlue, RGD840

Other means of identification

Product Code(s) SDS-06125 EN A

UN/ID no. UN3082

Synonyms None

Recommended use of the chemical and restrictions on use

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

Details of the supplier of the safety data sheet

Manufacturer Address

Stratasys Corporate headquarters United States 9600 West 76th Street Suite #108 Eden Prairie, MN 55344 United States

Local: +1 952-294-3900 Phone: +1 952-937-3000

Emergency telephone number

• +44 1865 407333 - Global - English Language response

+44 1235 239670 - Europe - Multi lingual response +1 215 207 0061 - USA - Multi-lingual response +65 3158 1074 - Asia Pacific - Multi lingual response +61 2 8014 4558 - Australia - English Language response

+86 512 8090 3042 - China - Chinese response

E-mail address info@Stratasys.com

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1B
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

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Label elements

Danger

Hazard statements

Harmful if swallowed

Causes serious eye damage

May cause an allergic skin reaction

Suspected of causing cancer

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure



The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance Ink cartridge

Physical state liquid

Odor Characteristic

Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Contaminated work clothing must not be allowed out of the workplace

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

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

IF ON SKIN: Wash with plenty of water and soap

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store locked up

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

May be harmful in contact with skin. Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Mixture</u>

Chemical name	CAS No.	Weight-%	Proprietary
Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	10 - 30	*
4-(1-Oxo-2-propenyl)-morpholine	5117-12-4	10 - 30	*
Proprietary	Proprietary	10 - 30	*
Proprietary	Proprietary	3 - 10	*
Proprietary	Proprietary	1 - 3	*
Proprietary	Proprietary	1 - 3	*
Proprietary	Proprietary	0.3-1	*
Titanium dioxide	13463-67-7	0.1-0.3	*
2-Propenoic acid	79-10-7	0.1-0.3	*
Glycerol, propoxylated, esters with acrylic acid	52408-84-1	0.1-0.3	*

^{*}The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or

concerned: Get medical advice/attention.

Eye contact Get immediate medical advice/attention. Rinse immediately with plenty of water, also under

the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an

allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

dioxide (CO2), regular dry chemical (sodium bicarbonate), regular foam (Aqueous Film

Forming Foam-AFFF), or water spray to cool containers.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the No information available.

chemical

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Explosion data

Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Special protective equipment for

fire-fighters

Cool containers with flooding quantities of water until well after fire is out. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Move containers from fire area if you can do it without risk. Use personal protection equipment. 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from

and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

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 Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

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. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure LimitsThe following ingredients are the only ingredients of the product above the cut-off level (or

level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other

recommended limit. At this time, the other relevant constituents have no known exposure

limits from the sources listed here.

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	Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Γ	Titanium dioxide	TWA: 10 mg/m ³	TWA: 15 mg/m³ total dust	IDLH: 5000 mg/m ³
	13463-67-7		(vacated) TWA: 10 mg/m³ total	-
			dust	
Γ	2-Propenoic acid	TWA: 2 ppm	(vacated) TWA: 10 ppm	TWA: 2 ppm
	79-10-7	S*	(vacated) TWA: 30 mg/m ³	TWA: 6 mg/m ³
			(vacated) S*	

Appropriate engineering controls

Engineering controls Showers

Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand Protection Wear suitable gloves.

Skin and body protectionWear suitable protective clothing.

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 Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do

not eat, drink or smoke when using this product. Wash hands before breaks and

None known

immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance Ink cartridge
Odor Characteristic

Color Blue

Odor threshold No information available

<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

pH N/A

Melting point / freezing point No data available None known Boiling point / boiling range No data available None known

Flash point $>= 100 - < 250 \, ^{\circ}\text{C} \, / >= 212 - <$

482 °F

Evaporation rateNo data availableNone knownFlammability (solid, gas)No data availableNone knownFlammability Limit in AirNone known

Upper flammability limit: No data available

Lower flammability limit:No data availableVapor pressureNo data available

No data available None known Vapor density Relative density No data available None known Insoluble in water Water solubility Solubility in other solvents No data available None known Partition coefficient No data available None known **Autoignition temperature** No data available None known

Autoignition temperature

No data available

None known

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Explosive propertiesNo information available **Oxidizing properties**No information available

Other Information

Softening point
Molecular weight
VOC Content (%)
Liquid Density
No information available

10. STABILITY AND REACTIVITY

Reactivity Heating may cause a fire.

Chemical stability Decomposes on exposure to light. Unstable if heated.

Conditions to avoid None known based on information supplied.

Incompatible materialsNone known based on information supplied.

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

11. TOXICOLOGICAL INFORMATION

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 Harmful if swallowed. (based on components). Specific test data for the substance or

mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting

and diarrhea.

Information on toxicological effects

Symptoms Redness. Burning. May cause blindness. Itching. Rashes. Hives.

Numerical measures of toxicity

Acute toxicity

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

 ATEmix (oral)
 1,613.00 mg/kg

 ATEmix (dermal)
 4,883.00 mg/kg

 ATEmix (inhalation-dust/mist)
 50.00 mg/l

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

Component Information

	Chemical name	Oral LD50	Dermal LD50	Inhalation LC50	
	Exo-1,7,7-trimethylbicyclo[2.2.1]	= 4890 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-	
	hept-2-yl acrylate				
	5888-33-5				
	4-(1-Oxo-2-propenyl)-morpholin	= 588 mg/kg (rat)	> 2000 mg/kg (rat)	= 5.28 mg/l (rat)	

	,		
e			
5117-12-4			
Proprietary	(Rat) LD50 = 1,590 - 3,910	(Rabbit) LD50 = $> 2,000 \text{ mg/kg}$	(Rat) 1 h LC0 = 6.7 mg/l
	mg/kg		-
Proprietary	>2000 mg/kg (Rat)	>2000 mg/kg	-
Proprietary	= 2.000 mg/kg (Rat) (Method:	= 2.000 mg/kg (Rat)(Method:	-
	OECD Test Guideline 423)	OECD Test Guideline 402)	
Proprietary	rat (oral): > 2,500 mg/kg (OECD	> 5,000 mg/kg (OECD	> 1 mg/l 4 h (OECD Guideline
	Guideline 423)	Guideline 402)	403)
Titanium dioxide	> 10000 mg/kg	-	-
13463-67-7	> 10000 mg/kg(Rat)		
2-Propenoic acid	= 193 mg/kg (Rat) = 33500	= 295 mg/kg (Rabbit) = 280	= 3.6 mg/L (Rat) 4 h = 11.1
79-10-7	μg/kg (Rat)	μĽ/kg (Rabbit)	mg/L (Rat)1h

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
Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity No information available.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Titanium dioxide 13463-67-7	-	Group 2B	•	Х
2-Propenoic acid 79-10-7	-	Group 3	-	-

IARC (International Agency for Research on Cancer) Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea
			microorganisms	
Exo-1,7,7-trimethylbicycl	1.98 mg/l Fresh water	0.704 mg/l Fresh water	-	0.524 mg/l Fresh water
o[2.2.1]hept-2-yl acrylate	_	_		_
5888-33-5				
4-(1-Oxo-2-propenyl)-mor	120 mg/l (algae)	-	-	120 mg/kg (daphnia)
pholine				
5117-12-4				
Proprietary	Pseudokirchneriella	Oncorhynchus mykiss	-	Daphnia magna (Water
	subcapitata (green algae)	(rainbow trout) 96 h LC50		flea) 48 h EC50 = 95 mg/l
	96 h EC50 = 0.17 mg/l	= 27 mg/l		-
Proprietary	(Pseudokirchneriella	(Fish) : 4,95 mg/l	-	(Daphnia magna Straus)

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	subcapitata) : 1,6 mg/l (Method: OECD Test Guideline 201)			: 2,36 mg/l (Method: OECD Test Guideline 202)
Proprietary	14.4 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)	24 mg/l, Brachydanio rerio (Directive 92/69/EEC, C.1, static)	-	53.9 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic)
2-Propenoic acid 79-10-7	0.04: 72 h Desmodesmus subspicatus mg/L EC50 0.17: 96 h Pseudokirchneriella subcapitata mg/L EC50	222: 96 h Brachydanio rerio mg/L LC50 semi-static	-	95: 48 h Daphnia magna mg/L EC50 270: 24 h Daphnia magna mg/L LC50 Static

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
2-Propenoic acid 79-10-7	0.46

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

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.

US EPA Waste Number U008

	Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Ī	2-Propenoic acid 79-10-7	-	-	-	U008

14. TRANSPORT INFORMATION

Additional information 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

<u>DOT</u>

UN/ID no. UN3082

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class 9
Packing group II

Special Provisions 8, 146, 173, 335, IB3, T4, TP1, TP29

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III, Marine pollutant

Emergency Response Guide

Number

171

TDG

UN/ID no. UN3082

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class 9
Packing group III

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III

MEX

UN/ID no. UN3082

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class 9

Special Provisions 274, 331, 335

Packing group III

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III

ICAO (air)

UN/ID no. UN3082

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class 9
Packing group III

Special Provisions A97, A158, A197

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III

IATA

UN Number UN3082
Transport hazard class(es) 9
Packing group III
ERG Code 9L
Special Provisions A197

Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (2-Propenoic acid), 9, III

IMDG

 UN Number
 UN3082

 Transport hazard class(es)
 9

 Packing group
 III

 EmS-No.
 F-A, S-F

 Special Provisions
 274, 335, 969

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid, STABILIZER), 9, III, Marine pollutant

RID

UN Number UN3082

UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Transport hazard class(es) 9
Packing group III
Classification code M6

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III (STABILIZER, PROPRIETARY STABILIZER)

Labels

<u>ADR</u>

UN Number UN3082

UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Transport hazard class(es)

Packing group

Classification code

Tunnel restriction code

(E)

Special Provisions 274, 335, 601, 375

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III (STABILIZER, PROPRIETARY STABILIZER)

Labels 9

ADN

UN/ID no UN3082

UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Transport hazard class(es) 9
Packing group III
Classification code M6

Special Provisions 274, 335, 375, 601

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(2-Propenoic acid), 9, III (STABILIZER, PROPRIETARY STABILIZER)

Hazard label(s) 9 Limited quantity (LQ) 5 L



15. REGULATORY INFORMATION

International Inventories

TSCA Complies

DSL/NDSL No information available EINECS/ELINCS No information available

ENCS Complies Complies

KECL No information available PICCS No information available

AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard

Chronic Health Hazard

Fire hazard

Sudden release of pressure hazard

Reactive Hazard

No

No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

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CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
2-Propenoic acid	5000 lb	-	RQ 5000 lb final RQ
79-10-7			RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:.

Chemical name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen

U.S. State Right-to-Know Regulations

US State Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
2-Propenoic acid	X	X	X
79-10-7			

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA Health hazards 3 Flammability 1 Instability 0 Physical and chemical

properties -

Health hazards 3 * Flammability 1 Physical hazards 0 Personal protection X

Chronic Hazard Star Legend *= Chronic Health Hazard

Revision Date 08-Nov-2017

Revision NoteNo information available.

Disclaimer

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End of Safety Data Sheet

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