

SECTION 1 : Identification of the substance/preparation and of the company / undertaking**(a) GHS product identifier**

Garreco Print Gingiva 3D Resin

(e) Emergency phone number

CHEMTRAC 1-800-424-9300

CCN9105**(b) Other means of identification**

N/A

(c) Recommended use of the chemical and restrictions on use

For professional 3D printing for dental applications.

(d) Supplier's details

Garreco, LLC.

PO Box 1258

Heber Springs, AR 72543

Phone: 1-800-334-1443

SECTION 2: Hazards identification**(a) GHS classification of the substance/mixture**

Aquatic Chronic 2: Hazardous to the aquatic environment, long-term hazard, Category 2, H411

Eye Irrit. 2: Eye irritation, Category 2, H319

Skin Irrit. 2: Skin irritation, Category 2, H315

Skin Sens. 1B: Sensitisation, skin, Category 1B, H317

(b) Label Elements**Hazard statements**

Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.

Eye Irrit. 2: H319 - Causes serious eye irritation.

Skin Irrit. 2: H315 - Causes skin irritation.

Skin Sens. 18: H317 - May cause an allergic skin reaction.

SECTION 2: Hazards identification (Continued)**Precautionary statements**

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P264: Wash thoroughly after handling.

P272: Contaminated work clothing should not be allowed out of the workplace.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear.

P302+P352: IF ON SKIN: Wash with plenty of water.

P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313: If skin irritation occurs: Get medical advice/attention.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P337+P313: If eye irritation persists: Get medical advice/attention.

P391: Collect spillage.

P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

Hazard Symbol(s)

Exclamation Mark
Environment

Signal Word(s)

Warning

(c) Other hazards which do not result in classification

Contains diisodecyl phenyl phosphite, Diphenyl(2,4,6-t rimethylbenzoyl)phosphine oxide, pentaerythritol tetraacrylate.

SECTION 3: Composition/information on ingredients

(a) Chemical(s) Identity: (b) Common Name:	(c) CAS No.	Mixture: Concentration (Percentage)
Urethane Acrylate Oligomer	EC 944-664-8	9 - <30 %
Pentaerythritol tetraacrylate	4986-89-4	9 - <30%
(5-ethyl-1,3-dioxan-5-yl)methyl acrylate	66492-51-1	9 - <30 %
exo--1, 7, 7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate	7534-94-3	3 - <9%
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	2- <2.5%
2,2-bis(acryloyloxymethyl)butyl acrylate	15625-89-5	0.5 - <2%
Toluene	108-88-3	0.01 - <0.1%
N-butyl acetate	123-86-4	<0.01%
2-ethylhexanol	104-76-7	<0.01%
2-methoxy-1-methylethyl acetate	108-65-6	<0.01%

SECTION 4: First-aid measures

(a) Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation: This product is not classified as hazardous through inhalation. However, in case of intoxication symptoms it is recommended to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact: Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact: Rinse eyes thoroughly with water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case removal could cause further damage. In all cases, after deaning, a doctor should be consulted as quickly as possible with the SDS for the product.

By ingestion/aspiration: Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

(b) Most important symptoms and effects, both acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

(c) Indication of any immediate medical attention and special treatment needed:

ND

SECTION 5: Fire-fighting measures**(a) Suitable extinguishing media:**

Product is non-flammable under normal conditions of storage, manipulation and use, but the product contains flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

(b) Special hazards arising from the chemical or mixture:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

(c) Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit, ...) in accordance with Directive 89/654/EC.

SECTION 6: Accidental release measures**(a) Personal precautions, protective equipment and emergency procedures:**

Isolate leaks provided that there is no additional risk for the people performing this task. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inert medium. Destroy any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

(b) Environmental precautions:

Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

(c) Methods and material for containment and cleaning up:

It is recommended: Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

SECTION 7: Handling and storage

(a) Precautions for safe handling:

- A.- Precautions for safe manipulation
 Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.
- B. - Technical recommendations for the prevention of fires and explosions
 Avoid the evaporation of the product as it contains flammable substances, which could form flammable vapour/air mixtures in the presence of sources of ignition. Control sources of ignition (mobile phones, sparks, ...) and transfer at slow speeds to avoid the creation of electrostatic charges. Consult section 10 for conditions and materials that should be avoided.
- C.- Technical recommendations to prevent ergonomic and toxicological risks
 Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.
- D.- Technical recommendations to prevent environmental risks
 Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.

(b) Conditions for safe storage, including any incompatibilities:

- A.- Technical measures for storage
 Minimum Temp.: 5° C
 Maximum Temp.: 30° C
- B. - General conditions for storage
 Avoid sources of heat, radiation, static electricity and contact with food.

SECTION 8: Exposure controls/Personal protection

(a) Control parameters:

Chemical	ACGIH	OSHA
	TLV-TWA	PEL TWA
Toluene	20 ppm	200 ppm
N-butyl acetate	50 ppm (238 mg/m ³)	150 ppm (710 mg/m ³)
2-ethylhexanol	ND	ND
2-methoxy-1-methylethyl acetate	ND	100 ppm (541 mg/m ³)(CAL/OSHA)

(b) Appropriate Engineering Controls:

Provide emergency shower and eyewash stations in case of exposure.

(c) Individual protection measures:

- MANDATORY RESPIRATORY:** Wear, at minimum, a NIOSH/OSHA approved half-face respirator with a vapor filter that conforms to EN 405:2002+A1:2010. Replace filter when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.
- MANDATORY HAND PROTECTION:** Use nitrile based protective gloves against minor risks. Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using CE III gloves in line with standards EN 420:2004+ A1:2010 and EN ISO 374-1:2016+A1:2018
- MANDATORY FACE PROTECTION:** Use panoramic glasses against splash/projections. Clean daily and disinfect periodically according to the manufacturer 's instructions. use if there is a risk of splashing. Recommend using protection conforming to EN 166:2022 EN ISO 4007:2018.

SECTION 9: Physical and chemical properties

(a) Appearance:	Viscous Liquid
(b) Odor:	Resin
(c) Odor threshold:	ND
(d) pH:	~ 6 - 8 (at 100%)
(e) Melting point / freezing point:	ND
(f) Initial boiling point and boiling range:	ND
(g) Flash point	Non Flammable (>60° C)
(h) Evaporation rate (BuAc=1):	ND
(i) Flammability:	ND
(j) Upper/lower flammability or explosive limits:	ND
(k) Vapor Pressure:	ND
(l) Density at 20° C:	ND
(m) Relative density:	ND
(n) Solubility:	ND
(o) Partition coefficient: n-octanol/water:	ND
(p) Auto-ignition temperature:	288° C
(q) Decomposition temperature:	ND
(r) Viscosity:	ND

SECTION 10: Stability and reactivity

(a) Reactivity:	No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.
(b) Chemical stability:	Stable
(c) Possibility of hazardous reactions:	Low
(d) Conditions to avoid:	Avoid strong acids, alkalis, or strong bases. Avoid Impact to Oxidizing materials.
(f) Hazardous decomposition products:	Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO ₂), carbon monoxide and other organic compounds.

SECTION 11: Toxicological information

The experimental information related to the toxicological properties of the product itself is not available.

Acute toxicity

Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

Skin corrosion/irritation

Contact with the skin: Produces skin inflammation.

Serious Eye Damage / Irritation

Contact with the eyes: Produces eye damage after contact.

Respiratory or skin sensitization

Cutaneous: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

Germ cell mutagenicity

Based on available data, classification is not met, however, does contain substances to this effect

Carcinogenicity

Based on available data, classification is not met, however, does contain substances to this effect

Reproductive toxicity

Based on available data, classification is not met, however, does contain substances to this effect

STOT-single exposure

Based on available data, classification is not met, however, does contain substances to this effect

STOT-repeated exposure

Based on available data, classification is not met, however, does contain substances to this effect

Aspiration Hazard

Based on available data, classification is not met, however, does contain substances to this effect

(a) Exposure route:	inhalation, skin and/or eye contact
(b) Symptoms related to the physical, chemical and toxicological characteristics:	difficulty breathing, rashes or irritations
(c) Delayed and immediate effects and also chronic effects from short and long term exposure:	difficulty breathing, rashes or irritations

SECTION 11: Toxicological information (Continued)

(d) Numerical measures of toxicity:

CHEMICAL	CAS NO.	LD50 ORAL	LD50 DERMAL	LC50 INHALATION
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	5500 mg/kg (rat)	N/A	N/A
2,2-bis(acryloyloxymethyl)butyl acrylate	15625-89-5	5500 mg/kg (rat)	5170 mg/kg (rabbit)	N/A
Toluene	108-88-3	5580 mg/kg (rat)	12124 mg/kg (rat)	28.1 mg/L (4h rat)
N-butyl acetate	123-86-4	12789 mg/kg (rat)	14112 mg/kg (rabbit)	23.4 mg/L (4h rat)
2-ethylhexanol	104-76-7	3000 mg/kg (rat)	2100 mg/kg (rabbit)	N/A
2-methoxy-1-methylethyl acetate	108-65-6	8532 mg/kg (rat)	5100 mg/kg (rat)	30 mg/L (4h rat)

SECTION 12: Ecological information

(a) Ecotoxicity:

CHEMICAL	CONCENTRATION	TIME (HOURS)	GENUS
(5-ethyl-1,3-dioxan-5-yl)methyl acrylate	LC50	4 mg/L	FISH
	EC50	20 mg/L	CRUSTACEAN
	EC50	34 mg/L	ALGAE
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	LC50	>1 - 10 mg/L	FISH
	EC50	>1 - 10 mg/L	CRUSTACEAN
	EC50	>1 - 10 mg/L	ALGAE
2,2-bis(acryloyloxymethyl)butyl acrylate	LC50	0.87 mg/L	FISH
	EC50	20 mg/L	CRUSTACEAN
	EC50	4.9 mg/L	ALGAE
Toluene	LC50	5.5 mg/L	FISH
	EC50	3.78 mg/L	CRUSTACEAN
	EC50	125 mg/L	ALGAE
N-butyl acetate	LC50	N/A	
	EC50	N/A	
	EC50	675 mg/L	ALGAE
2-ethylhexanol	LC50	28 mg/L	FISH
	EC50	39 mg/L	CRUSTACEAN
	EC50	11.5 mg/L	ALGAE
2-methoxy-1-methylethyl acetate	LC50	161 mg/L	FISH
	EC50	481 mg/L	CRUSTACEAN
	EC50	675 mg/L	ALGAE

Chronic toxicity

CHEMICAL	CONCENTRATION	GENUS
N-butyl acetate	NOEC 161 mg/L	CRUSTACEAN
2-methoxy-1-methylethyl acetate	LC50 47.5 mg/L	FISH
	EC50 100 mg/L	CRUSTACEAN

SECTION 12: Ecological information (Continued)

(b) Persistence and degradability:

CHEMICAL	DEGRADABILITY		BIODEGRADABILITY	
	(5-ethyl-1,3-dioxan-5-yl)methyl acrylate	BOD5	Non-applicable	CONCENTRATION
COD		Non-applicable	PERIOD	28 days
BOD5/COD		Non-applicable	% BIODEGRADABLE	28%
2,2-bis(acryloyloxymethyl)butyl acrylate	BOD5	Non-applicable	CONCENTRATION	Non-applicable
	COD	Non-applicable	PERIOD	28 days
	BOD5/COD	Non-applicable	% BIODEGRADABLE	90%
Toluene	BOD5	2.5 g O2/g	CONCENTRATION	100 mg/L
	COD	Non-applicable	PERIOD	14 days
	BOD5/COD	Non-applicable	% BIODEGRADABLE	100%
N-butyl acetate	BOD5	Non-applicable	CONCENTRATION	Non-applicable
	COD	Non-applicable	PERIOD	5 days
	BOD5/COD	Non-applicable	% BIODEGRADABLE	84%
2-methoxy-1-methylethyl acetate	BOD5	Non-applicable	CONCENTRATION	785 mg/L
	COD	Non-applicable	PERIOD	8 days
	BOD5/COD	Non-applicable	% BIODEGRADABLE	100%

(c) Bioaccumulative potential

CHEMICAL	BIOACCUMULATION POTENTIAL	
	2,2-bis(acryloyloxymethyl)butyl acrylate	BCF
POW LOG		4.35
POTENTIAL		High
Toluene	BCF	13
	POW LOG	2.73
	POTENTIAL	LOW
N-butyl acetate	BCF	4
	POW LOG	1.78
	POTENTIAL	LOW
2-ethylhexanol	BCF	13
	POW LOG	2.73
	POTENTIAL	LOW
2-methoxy-1-methylethyl acetate	BCF	1
	POW LOG	0.43
	POTENTIAL	LOW

(d) Mobility in soil:

CHEMICAL	ABSORPTION/DESORPTION		VOLATILITY	
	(5-ethyl-1,3-dioxan-5-yl)methyl acrylate	KOC	12	HENRY
CONCLUSION		Very High	DRY SOIL	No
SURFACE TENSION		Non-applicable	MOIST SOIL	No
2,2-bis(acryloyloxymethyl)butyl acrylate	KOC	168	HENRY	Non-applicable
	CONCLUSION	High	DRY SOIL	Non-applicable
	SURFACE TENSION	Non-applicable	MOIST SOIL	Non-applicable
Toluene	KOC	178	HENRY	672.8 Pa m ³ /mol
	CONCLUSION	Moderate	DRY SOIL	Yes
	SURFACE TENSION	2.793E-2 N/m (25° C)	MOIST SOIL	Yes

SECTION 12: Ecological information (Continued)

CHEMICAL	ABSORPTION/DESORPTION		VOLATILITY	
	N-butyl acetate	KOC	Non-applicable	HENRY
CONCLUSION		Non-applicable	DRY SOIL	Non-applicable
SURFACE TENSION		2.478E-2 N/m (25° C)	MOIST SOIL	Non-applicable
2-ethylhexanol	KOC	Non-applicable	HENRY	Non-applicable
	CONCLUSION	Non-applicable	DRY SOIL	Non-applicable
	SURFACE TENSION	2.82E-2 N/m (25° C)	MOIST SOIL	Non-applicable

Product fails to meet PBT /vPvB criteria

(e) Other adverse effects:
 Not described

SECTION 13: Disposal considerations

CODE	DESCRIPTION	WASTE CLASS (Regulation (EU) No. 1357 / 2014)
20 01 27	paint, inks, adhesives and resins containing hazardous substances	Dangerous

TYPE OF WASTE (Regulation (EU) No 1357 / 2014)

HP14 Ecotoxic, HP13 Sensitizing, HP4 Irritant

Consult with local waste authorities, regulations, and/or a authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2014/955/EC) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. otherwise, it will be processed as non-dangerous residue.

We do not recommended disposal down the drain. In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

SECTION 14: Transport information

(a) UN Number

UN3082

(b) UN Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. {{5-ethyl-1,3-dioxan-5-yl)methyl acrylate}

(c) Transport hazard class(es)

9; Labels: 9

(d) Packing Group

III

(e) Environmental hazards

Yes

(f) Transport in bulk

NA

(g) Other Information

Limited quantities 5 L

SECTION 15: Regulatory information

SARA Reporting Requirements:	NA
SARA Threshold Planning Quantity:	NA
TSCA Inventory Status:	ND
Other Federal Requirements:	NA
Other Canadian Regulations:	NA
State Regulatory Information:	NA

SECTION 16: Other information

PREPARED BY: Kristofer Mainar
GAR QMS SDS REFERENCE: A857

REVISION NUMBER: 220310

CHANGES FROM PREVIOUS VERSION: INITIAL VERSION

ABBREVIATIONS

NA Not Applicable	LD Lethal Dose
ND Not Determined	TC Toxic Concentration
NE Not Established	TD Toxic Dose
ppm parts per million	BOD Biological Oxygen Demand
G Gallon	COD Chemical Oxygen Demand
mg Milligram	Lo Lowest
L Liter	ThOD Theoretical Oxygen Demand
gm Gram	TLm Threshold Limit
mol Mole	IC Inhibitory Concentration
kg Kilogram	DOC Dissolved Organic Carbon
μ Micro	H Hours
mm Millimeter	M Months
p Pico	D Days
Pa Pascals	Y Years
c cento	W Weeks
LC Lethal Concentration	

ACGIH American Conference of Governmental Industrial Hygienist
 CPR Controlled Product's Regulation
 DSL Canadian Domestic Substances List
 NDSL Canadian Non-domestic Substance List
 IARC International Agency for Research for Cancer
 NOEL No Observed Effect Level
 NOAEL No Observed Adverse Effect Level
 OSHA Occupational Safety and Health Administration
 PEL Permissible Exposure Limit
 TLV Threshold Limit Value

THIS MATERIAL SAFETY DATA SHEET IS PREPARED IN COMPLIANCE WITH FEDERAL REGULATIONS (29 CFR 1910.1200) OF CHEMICALS AND THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING REVISION 5. ANY APPLICABLE STATE AND LOCAL REGULATIONS SHOULD BE CONSULTED.

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