SAFETY DATA SHEETS

This SDS packet was issued with item:

071473644

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

071418045 071473677 071473693 071473701



Lucitone Digital Print 3D Denture Resin / Primeprint Lucitone Digital Print 3D Denture Resin Dentsply Sirona

Version No: **2.1**Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **31/08/2023** Print Date: **13/09/2023** S.GHS.USA.EN.E

SECTION 1 Identification

Product Identifier

i roddot identilier		
Product name	Lucitone Digital Print 3D Denture Resin / Primeprint Lucitone Digital Print 3D Denture Resin	
Chemical Name	Not Applicable	
Synonyms	Part Number: 906200 - 906206, 906401 - 906404	
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains 2-phenoxyethyl methacrylate)	
Chemical formula	Not Applicable	
Other means of identification	Not Available	

Recommended use of the chemical and restrictions on use

Relevant identified uses

Denture Base Material For Professional Use only Use according to manufacturer's directions.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Dentsply Sirona
1301 Smile Way, York PA 17404 United States
+1-844-848-0137
Not Available
http://www.dentsplysirona.com/
Not Available

Emergency phone number

Association / Organisation	Dentsply Sirona	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+1-800-243-1942	+1 855-237-5573
Other emergency telephone numbers	Not Available	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

Una vez conectado y si el mensaje no está en su idioma preferido, por favor marque 02

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification

Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Reproductive Toxicity Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 1

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Signal	word

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Trecationary statement(s) revention	
P201	Obtain special instructions before use.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P202	Do not handle until all safety precautions have been read and understood.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

	Tr 1 1
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.	
P403+P233 Store in a well-ventilated place. Keep container tightly closed.		

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Wilxtures		
CAS No	%[weight]	Name
10595-06-9	30-60	2-phenoxyethyl methacrylate
Not Available	30-60	Urethane Methacrylate oligomer
16969-10-1	1-5	2-hydroxy-3-phenoxypropyl acrylate
Not Available	1-5	Urethane Acrylate/Methacrylate monomer
75980-60-8	<1	diphenyl(2.4.6-trimethylbenzoyl)phosphine
108-88-3	trace	toluene
Not Available	balance	Ingredients determined not to be hazardous

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SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	 If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. 	
Skin Contact	If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.	
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. 	
Ingestion	 Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. 	

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

- ► Foam
- ► Dry chemical powder.
- ► BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility

None known.

Special protective equipment and precautions for fire-fighters

Special protective equipment	and precautions for fire-righters
Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	 The material is not readily combustible under normal conditions. However, it will break down under fire conditions and the organic component may burn. Not considered to be a significant fire risk. Heat may cause expansion or decomposition with violent rupture of containers. Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). May emit acrid smoke. carbon monoxide (CO) carbon dioxide (CO2) other pyrolysis products typical of burning organic material. May emit clouds of acrid smoke

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up		
Minor Spills	Environmental hazard - contain spillage. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable, labelled container for waste disposal.	
Major Spills	Environmental hazard - contain spillage. Moderate hazard. Clear area of personnel and move upwind.	

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- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- ▶ Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

- ▶ DO NOT allow clothing wet with material to stay in contact with skin
- ► Avoid all personal contact, including inhalation.
- ▶ Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
 - ▶ When handling, DO NOT eat, drink or smoke
 - ▶ Keep containers securely sealed when not in use.
 - Avoid physical damage to containers.
 - Always wash hands with soap and water after handling.
 - Work clothes should be laundered separately.
 - Use good occupational work practice.
 - ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.
 - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

Other information

Safe handling

- Store in original containers.
- Keep containers securely sealed.Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Deserve manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container

- ► Metal can or drum
- ▶ Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility

None known

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-2	toluene	Toluene	200 ppm	300 ppm	500 (10 min) ppm	(Z37.12-1967)
US NIOSH Recommended Exposure Limits (RELs)	toluene	Toluene	100 ppm / 375 mg/m3	560 mg/m3 / 150 ppm	Not Available	Not Available

TEEL -2

Emergency Limits

ingredient	ICCL-I	IEEL-2		IEEL-3
toluene	Not Available	Not Available		Not Available
Ingredient	Original IDLH		Revised IDLH	
2-phenoxyethyl methacrylate	Not Available		Not Available	
2-hydroxy-3-phenoxypropyl acrylate	Not Available		Not Available	
diphenyl(2,4,6- trimethylbenzoyl)phosphine	Not Available		Not Available	
toluene	500 ppm		Not Available	

Occupational Exposure Banding

Ingredient Occupational Exposure Band Rating	Occupational Exposure Band Limit
--	----------------------------------

Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

TEEL -3

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Ingredient	Occupational Exposure Band Rating Occupational Exposure Band Limit		
2-phenoxyethyl methacrylate	E	≤ 0.1 ppm	
2-hydroxy-3-phenoxypropyl acrylate	E	≤ 0.1 ppm	
diphenyl(2,4,6- trimethylbenzoyl)phosphine	E ≤ 0.01 mg/m³		
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.		

Exposure controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant: Air Speed: 0.25-0.5 m/s solvent, vapours, degreasing etc., evaporating from tank (in still air) (50-100 f/min) aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray 0.5-1 m/s (100-200 drift, plating acid fumes, pickling (released at low velocity into zone of active generation) f/min.) direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active 1-2.5 m/s (200-500 f/min) generation into zone of rapid air motion) 2.5-10 m/s grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion) (500-2000 f/min.)

Appropriate engineering controls

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Individual protection measures, such as personal protective equipment













Eye and face protection

- Safety glasses with side shields
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

- ▶ Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

Hands/feet protection

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

· frequency and duration of contact,

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- · chemical resistance of glove material,
- · glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended
- · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374. AS/NZS 2161.10.1 or national equivalent) is recommended.
- · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
- Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- · Excellent when breakthrough time > 480 min
- · Good when breakthrough time > 20 min
- · Fair when breakthrough time < 20 min
- · Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended

Body protection

See Other protection below

Other protection

- Overalls
- P.V.C apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

Ansell Glove Selection

Glove — In order of recommendation
AlphaTec® 38-612
AlphaTec® 15-554
AlphaTec® Solvex® 37-185
AlphaTec® 58-008
AlphaTec® 58-530B
AlphaTec® 58-530W
AlphaTec® Solvex® 37-675
AlphaTec® 79-700
AlphaTec® 58-735
AlphaTec® 53-001

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 5 x ES	A-AUS / Class 1 P2	-	A-PAPR-AUS / Class 1 P2
up to 25 x ES	Air-line*	A-2 P2	A-PAPR-2 P2
up to 50 x ES	-	A-3 P2	-
50+ x ES	-	Air-line**	-

* - Continuous-flow; ** - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Pink Viscous Liquid with characteristic ester-like odour. Coloured		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Characteristic	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	>93	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available

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Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects	Information	on t	oxico	logical	effects
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Inhaled	Ŭ ,	cts or irritation of the respiratory tract (as classified by EC Directives using animal at exposure be kept to a minimum and that suitable control measures be used in an	
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.		
Skin Contact	models). Nevertheless, good hygiene practice requires the setting. Open cuts, abraded or irritated skin should not be expose.	prasions or lesions, may produce systemic injury with harmful effects. Examine the sl	
Eye	If applied to the eyes, this material causes severe eye dar	mage.	
Chronic	Skin contact with the material is more likely to cause a ser	nsitisation reaction in some persons compared to the general population.	
Lucitone Digital Print 3D Denture Resin / Primeprint	TOXICITY	IRRITATION	
Lucitone Digital Print 3D Denture Resin	Not Available	Not Available	
	TOXICITY	IRRITATION	
2-phenoxyethyl methacrylate	Not Available	Eye: adverse effect observed (irritating) ^[1]	
		Skin: adverse effect observed (irritating)[1]	
	TOXICITY	IRRITATION	
2-hydroxy-3-phenoxypropyl	Oral (Rat) LD50: >2000 mg/kg ^[1]	Eye: adverse effect observed (irreversible damage)[1]	
acrylate		Skin: no adverse effect observed (not irritating) ^[1]	
	TOXICITY	IRRITATION	
diphenyl(2,4,6-	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye (rabbit): non-irritating *	
trimethylbenzoyl)phosphine	Oral (Rat) LD50: >5000 mg/kg ^[1]	Skin (rabbit): non-irritating *	
	TOXICITY	IRRITATION	
	Dermal (rabbit) LD50: 12124 mg/kg ^[2]	Eye (rabbit): 2mg/24h - SEVERE	
	Inhalation(Rat) LC50: >13350 ppm4h ^[2]	Eye (rabbit):0.87 mg - mild	
	Oral (Rat) LD50: 636 mg/kg ^[2]	Eye (rabbit):100 mg/30sec - mild	
toluene		Eye: adverse effect observed (irritating) ^[1]	
		Skin (rabbit):20 mg/24h-moderate	
		Skin (rabbit):500 mg - moderate	
		Skin: adverse effect observed (irritating) ^[1]	
		Skin: no adverse effect observed (not irritating)[1]	
Legend:	Value obtained from Europe ECHA Registered Substan	nces - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise	

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2-PHENOXYETHYL METHACRYLATE

TOLUENE

Where no "official" classification for acrylates and methacrylates exists, there have been cautious attempts to create classifications in the absence of contrary evidence. For example

Monalkyl or monoarylesters of acrylic acids should be classified as R36/37/38 and R51/53

Monoalkyl or monoaryl esters of methacrylic acid should be classified as R36/37/38

Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH2=CHCOO or CH2=C(CH3)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing.

This position has now been revised and acrylates and methacrylates are no longer de facto carcinogens.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

Acute toxicity: Humans exposed to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis (sleepiness) and death. When inhaled or swallowed, toluene can cause severe central nervous system depression, and in large doses has a narcotic effect. 60mL has caused death. Death of heart muscle fibres, liver swelling, congestion and bleeding of the lungs and kidney injury were all found on autopsy.

Exposure to inhalation at a concentration of 600 parts per million for 8 hours resulted in the same and more serious symptoms including euphoria (a feeling of well-being), dilated pupils, convulsions and nausea. Exposure to 10000-30000 parts per million (1-3%) has been reported to cause narcosis and death. Toluene can also strip the skin of lipids, causing skin inflammation.

Subchronic/chronic effects: Repeat doses of toluene cause adverse central nervous system effects and can damage the upper airway, the liver and the kidney. Adverse effects occur from both swallowing and inhalation. In humans, a reported lowest level causing adverse effects on the nervous system is 88 parts per million. In one case, toluene caused heart sensitization and death. In several cases of "glue sniffing", damage to the cerebellum was noted. Workers chronically exposed to toluene fumes have reported reduced white cell counts.

Developmental/Reproductive toxicity: Exposure to high levels of toluene can result in adverse effects in the developing foetus. Several studies have indicated that high levels of toluene can also adversely affect the developing offspring in laboratory animals. In children who were exposed to toluene before birth, as a result of solvent abuse by the mother, variable growth, a small head, central nervous system dysfunction, attention deficits, minor facial and limb abnormalities, and developmental delay were seen.

Absorption: Studies in humans and animals have shown that toluene is easily absorbed through the lungs and gastrointestinal tract, with much less being absorbed through the skin.

Distribution: Animal studies show that toluene may be distributed in the body fat, bone marrow, spinal nerves, spinal cord and brain white matter, with lower levels in the blood, kidney and liver. Toluene has generally been found to accumulate in fatty tissue, and in highly vascularised tissues. Metabolism: Inhaled or ingested toluene may be metabolized to benzyl alcohol, after which it is further oxidized to benzaldehyde and benzoic acid. Benzoic acid is sometimes conjugated with glycine to form hippuric acid or reacted with glucuronic acid to form benzoyl glucuronide. O-cresol and p-cresol formed by ring hydroxylation are considered minor metabolites.

Excretion: Toluene is mainly (60-70%) excreted through the urine as hippuric acid. Benzoyl glucuronide accounts for 10-20% of excretion, and unchanged toluene through exhaled air also accounts for 10-20%. Excretion of hippuric acid is usually complete within 24 hours of exposure.

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Denture Resin &
2-PHENOXYETHYL
METHACRYLATE &
2-HYDROXY3-PHENOXYPROPYL
ACRYLATE

The following information refers to contact allergens as a group and may not be specific to this product.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

2-PHENOXYETHYL METHACRYLATE & 2-HYDROXY-3-PHENOXYPROPYL ACRYLATE Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

No significant acute toxicological data identified in literature search.

Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	✓	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	×

Legend:

— Data either not available or does not fill the criteria for classification

Data available to make classification

SECTION 12 Ecological information

Toxicity

Lucitone Digital Print 3D Denture Resin / Primeprint Lucitone Digital Print 3D Denture Resin	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
2-phenoxyethyl methacrylate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	1.33mg/l	2
	EC50	72h	Algae or other aquatic plants	1.7mg/l	2
	EC50	48h	Crustacea	1.21mg/l	2
	LC50	96h	Fish	~10mg/l	2
	EC10(ECx)	72h	Algae or other aquatic plants	0.11mg/l	2

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	Endpoint	Test Duration (hr)	Species	Value	Source
2-hydroxy-3-phenoxypropyl	EC50	72h	Algae or other aquatic plants	1.7mg/l	2
	EC50	48h	Crustacea	1.21mg/l	2
acrylate	EC50	96h	Algae or other aquatic plants	1.33mg/l	2
	LC50	96h	Fish	Fish ~10mg/l	
	EC10(ECx)	72h	Algae or other aquatic plants	0.11mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>2.01mg/l	2
diphenyl(2,4,6-	EC50	48h	Crustacea	3.53mg/l	2
trimethylbenzoyl)phosphine	LC50	96h	Fish	10-100mg/l	Not Available
	NOEC(ECx)	96h	Fish	1mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	>376.71mg/L	4
4.1	EC50	72h	Algae or other aquatic plants	12.5mg/l	4
toluene	EC50	48h	Crustacea	3.78mg/L	5
	LC50	96h	Fish	5-35mg/l	4
	NOEC(ECx)	168h	Crustacea	0.74mg/L	5
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan - Bioconcentration Data 8. Vendor Data				

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

DO NOT discharge into sewer or waterways

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
2-phenoxyethyl methacrylate	LOW	LOW
2-hydroxy-3-phenoxypropyl acrylate	LOW	LOW
diphenyl(2,4,6- trimethylbenzoyl)phosphine	HIGH	нівн
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)

Bioaccumulative potential

Ingredient	Bioaccumulation	
2-phenoxyethyl methacrylate	LOW (LogKOW = 3.0076)	
2-hydroxy-3-phenoxypropyl acrylate	LOW (LogKOW = 1.4131)	
diphenyl(2,4,6- trimethylbenzoyl)phosphine	MEDIUM (LogKOW = 3.8723)	
toluene	LOW (BCF = 90)	

Mobility in soil

Ingredient	Mobility
2-phenoxyethyl methacrylate	LOW (KOC = 315.5)
2-hydroxy-3-phenoxypropyl acrylate	LOW (KOC = 18.06)
diphenyl(2,4,6- trimethylbenzoyl)phosphine	LOW (KOC = 188300)
toluene	LOW (KOC = 268)

SECTION 13 Disposal considerations

Waste treatment methods

- ► Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Product / Packaging disposal

- bill frontainer can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.

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Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- ► Reuse
- ► Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- ▶ Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- ▶ Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required



Marine Pollutant



Shipping container and transport vehicle placarding and labeling may vary from the below information. Products that are regulated for transport will be packaged and marked as Dangerous Goods in Limited Quantities according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT)

(· ·)			
14.1. UN number or ID number	3082		
14.2. UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains 2-phenoxyethyl methacrylate)		
14.3. Transport hazard class(es)	Class 9 Subsidiary risk Not Applicable		
14.4. Packing group	III		
14.5. Environmental hazard	Environmentally hazardous		
14.6. Special precautions for user	Hazard Label 9 Special provisions 8, 146, 173, 335, 441, IB3, T4, TP1, TP29		

For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain LESS THAN the reportable quantity (5 kg or 5 L) - Not Regulated

For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain MORE THAN the reportable quantity (5 kg or 5 L) - Regulated and classified as below:

Air transport (ICAO-IATA / DGR)

14.1. UN number	3082		
14.2. UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains 2-phenoxyethyl methacrylate)		
	ICAO/IATA Class	9	
4.3. Transport hazard class(es)	ICAO / IATA Subsidiary Hazard	Not Applicable	
ciass(es)	ERG Code	9L	
4.4. Packing group	III		
4.5. Environmental hazard	Environmentally hazardous		
	Special provisions		A97 A158 A197 A215
	Cargo Only Packing Instructions		964
14.6. Special precautions for user	Cargo Only Maximum Qty / Pack		450 L
	Passenger and Cargo Packing In	structions	964
	Passenger and Cargo Maximum Qty / Pack		450 L

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	Passenger and Cargo Limited Quantity Packing Instructions		Y964
	Passenger and Car	rgo Limited Maximum Qty / Pack	30 kg G
Sea transport (IMDG-Code / G	GVSee)		
14.1. UN number	3082		
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains 2-phenoxyethyl methacrylate)		
14.3. Transport hazard class(es)	IMDG Class 9	9	
	IMDG Subrisk	Not Applicable	
14.4. Packing group	III		
14.5 Environmental hazard	Marine Pollutant		
	EMS Number	F-A, S-F	
14.6. Special precautions for	Special provisions	274 335 969	

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

user

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Limited Quantities

5 L

Product name	Group
2-phenoxyethyl methacrylate	Not Available
2-hydroxy-3-phenoxypropyl acrylate	Not Available
diphenyl(2,4,6- trimethylbenzoyl)phosphine	Not Available
toluene	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
2-phenoxyethyl methacrylate	Not Available
2-hydroxy-3-phenoxypropyl acrylate	Not Available
diphenyl(2,4,6- trimethylbenzoyl)phosphine	Not Available
toluene	Not Available

SECTION 15 Regulatory information

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

2-phenoxyethyl methacrylate is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

2-hydroxy-3-phenoxypropyl acrylate is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

diphenyl(2,4,6-trimethylbenzoyl)phosphine is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

toluene is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants

US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity

US - California Proposition 65 - Reproductive Toxicity

US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List

US - Massachusetts - Right To Know Listed Chemicals

US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)

US Clean Air Act - Hazardous Air Pollutants

US CWA (Clean Water Act) - List of Hazardous Substances

US CWA (Clean Water Act) - Priority Pollutants

US CWA (Clean Water Act) - Toxic Pollutants

US DOE Temporary Emergency Exposure Limits (TEELs)

US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals

US EPA Integrated Risk Information System (IRIS)

US EPCRA Section 313 Chemical List

US NIOSH Recommended Exposure Limits (RELs)

US OSHA Permissible Exposure Limits (PELs) Table Z-2

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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Lucitone Digital Print 3D Denture Resin / Primeprint Lucitone Digital Print 3D Denture Resin

	Reportable Quantity in kg	Name Reportable Quantity in Pounds (lb)
		US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)
oN		Hazards Not Otherwise Classified
oN		Simple Asphyxiant
oN		Germ cell mutagenicity
oN		Hazard Hazard
oN		Specific target organ toxicity (single or repeated exposure)
SəY		Serious eye damage or eye irritation
SəY		Respiratory or Skin Sensitization
SəY		Skin Corrosion or Intiation
ХөХ		Reproductive toxicity
oN		Acute toxicity (any route of exposure)
oN		Carcinogenicity
oN		Combustible Dust
oN		In contact with water emits flammable gas
oN		Self-reactive
oN		Organic Peroxide
oN		Oxidizer (Liquid, Solid or Gas)
oN		Corrosive to metal
oN		Ругорноніс Сав
oN		Pyrophoric (Liquid or Solid)
oN		Self-heating
oN		Ехріозіче
oN		Gas under pressure
oM		Flammable (Gases, Aerosols, Liquids, or Solids)

†9†

anaulot

State Regulations

National Inventory National Inventory Status

MARNING: This product can expose you to chemicals including toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more US. California Proposition 65

information, go to www.P65Warnings.ca.gov.

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Vietnam - NCI	Уез
Mexico - INSQ	No (2-phenoxyethyl methacrylate; 2-hydroxy-3-phenoxypropyl acrylate)
Taiwan - TCSI	уөг
ADST - ASU	уез
Philippines - PICCS	Νο (2-hydroxy-3-phenoxypropyl acrylate)
New Zealand - NZIoC	уез
Korea - KECI	No (2-phenoxyethyl methacrylate)
Japan - ENCS	Уез
Europe - EINEC / ELINCS / NLP	Уез
China - IECSC	Уез
Canada - NDSL	No (dipheny(2,4,6-trimethylbenzoyl)phosphine; toluene)
Canada - DSL	No (2-phenoxyethyl methacrylate; 2-hydroxy-3-phenoxypropyl acrylate)
Australia - AIIC / Australia - Allon-Industrial Use	Уеѕ

SECTION 16 Other information

18/07/2022	Date Initial Date
31/08/2023	Revision Date

No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

Տուտաուչ	Version	SDS
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Russia - FBEPH

2.1	18/07/2022	Physical and chemical properties - Appearance, Hazards identification - Classification, Composition / information on ingredients - Ingredients
Version	Date of Update	Sections Updated

Yes = All CAS declared ingredients are on the inventory

No (2-phenoxyethyl methacrylate; 2-hydroxy-3-phenoxypropyl acrylate)

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Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average PC - STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit₀

IDLH: Immediately Dangerous to Life or Health Concentrations

ES: Exposure Standard

OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value BCF: BioConcentration Factors

BEI: Biological Exposure Index

AIIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List

NDSL: Non-Domestic Substances List

IECSC: Inventory of Existing Chemical Substance in China

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances