Lucitone Digital IPN™ 3D Premium Tooth and Primeprint Lucitone Digital IPN™ 3D Premium Tooth

Dentsply Sirona Venlo Distribution Center

Chemwatch Hazard Alert Code: **2**

Chemwatch: **5628-27**
Version No: **8.1**
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: **12/04/2024**
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SECTION 1 Identification of the substance / mixture and of the company / undertaking

1.1. Product Identifier

Product name	Lucitone Digital IPN™ 3D Premium Tooth and Primeprint Lucitone Digital IPN™ 3D Premium Tooth
Chemical Name	Not Applicable
Synonyms	906381, 906382, 906383, 906384, 906385, 906386, 906387, 906388, 906389, 906390, 906391, 906392, 906393, 906394, 906395, 906396, 906397, 906398, 906406, 906407, 906408, 906409, 906410, 906411, 906412, and 906413
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Resin for printed denture teeth For professional use only. Use according to manufacturer's directions. SDS are intended for use in the workplace ONLY. For domestic-use products, refer to consumer labels.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	**Dentsply Sirona Venlo Distribution Center**
Address	Piri Reisweg 23 Sevenum 5975 Netherlands
Telephone	+31 77 389 9916
Fax	Not Available
Website	Not Available
Email	Not Available

1.4. Emergency telephone number

Association / Organisation	**Dentsply Sirona Lab, Customer Service**	**CHEMWATCH EMERGENCY RESPONSE (24/7)**
Emergency telephone numbers	+1-800-243-1942	+31 70 262 0282
Other emergency telephone numbers	+31 112	+61 3 9573 3188

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

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	H315 - Skin Corrosion/Irritation Category 2, H317 - Sensitisation (Skin) Category 1, H319 - Serious Eye Damage/Eye Irritation Category 2, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3
Legend:	***1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI***

2.2. Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Supplementary statement(s)

EUH204	Contains isocyanates. May produce an allergic reaction.

Precautionary statement(s) Prevention

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.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

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.
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.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

Material contains UDMA, 3,3,5-trimethylcyclohexyl methacrylate, ethylene glycol dimethacrylate, 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate.

2.3. Other hazards

Cumulative effects may result following exposure*.

Limited evidence of a carcinogenic effect*.

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Possible respiratory sensitizer*.

Vapours potentially cause drowsiness and dizziness*.

diphenyl(2,4,6-trimethylbenzoyl)phosphine	Listed in the European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation
styrene	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
toluene	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

SECTION 3 Composition / information on ingredients

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2.EC No 3.Index No 4.REACH No	% [weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 105883-40-7 2.Not Available 3.Not Available 4.Not Available	50-60	UDMA	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H315, H319, H335, EUH204 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 7779-31-9 2.231-927-0 3.607-134-00-4 4.Not Available	10-20	3,3,5-trimethylcyclohexyl methacrylate	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H315, H319, H335 [2]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 97-90-5 2.202-617-2 3.607-114-00-5 4.Not Available	5-15	ethylene glycol dimethacrylate	Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H317, H335 [2]	STOT SE 3; H335: C ≥ 10 % Acute M factor: Not Available Chronic M factor: Not Available	Not Available
Not Available	5-10	Urethane Methacrylate oligomer	Not Applicable	Not Applicable	Not Available
1. 2082-79-3 2.218-216-0 3.Not Available 4.Not Available	1-5	3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	Sensitisation (Skin) Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1; H317, H400 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 56-81-5 2.200-289-5 3.Not Available 4.Not Available	0-1	glycerol	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H315, H319, H335 [1]	Not Available Acute M factor: Not Available	Not Available

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1. CAS No 2.EC No 3.Index No 4.REACH No	% [weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
				Chronic M factor: Not Available	
1. 75980-60-8 2.278-355-8 3.015-203-00-X 4.Not Available	<1	diphenyl(2,4,6-trimethylbenzoyl)phosphine	Reproductive Toxicity Category 2; H361f [2]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 128-37-0 2.204-881-4 3.Not Available 4.None	<1	2,6-di-tert-butyl-4-methylphenol	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Germ Cell Mutagenicity Category 2, Carcinogenicity Category 2, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H302, H315, H317, H319, H335, H341, H351, H361d, H373, H410 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 5870-38-2 2.227-522-3 3.Not Available 4.Not Available	<1	diethyl 2,5-dihydroxyterephthalate	Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Hazardous to the Aquatic Environment Acute Hazard Category 1; H315, H317, H319, H335, H400 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 100-42-5 2.202-851-5 3.601-026-00-0 4.Not Available	trace	styrene	Flammable Liquids Category 3, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Acute Toxicity (Inhalation) Category 4, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 1; H226, H315, H319, H332, H361d, H372 [2]	* Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 108-88-3 2.203-625-9 3.601-021-00-3 4.Not Available	trace	toluene *	Flammable Liquids Category 2, Aspiration Hazard Category 1, Skin Corrosion/Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2; H225, H304, H315, H336, H361d, H373 [2]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
Not Available	balance	Ingredients determined not to be hazardous	Not Applicable	Not Applicable	Not Available

Legend:	***1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties***

SECTION 4 First aid measures

4.1. Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water.

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	▸ 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. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ 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 or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay. Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

5.3. Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Fight fire from a safe distance, with adequate cover. ▸ If safe, switch off electrical equipment until vapour fire hazard removed. ▸ Use water delivered as a fine spray to control the 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	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). ▸ May emit acrid smoke. ▸ Mists containing combustible materials may be explosive. Combustion products include: carbon dioxide (CO_2)

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	isocyanates and minor amounts of hydrogen cyanide nitrogen oxides (NOx) metal oxides other pyrolysis products typical of burning organic material. May emit corrosive fumes. When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	▸ Remove all ignition sources. ▸ 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	▸ Liquid Isocyanates and high isocyanate vapour concentrations will penetrate seals on self contained breathing apparatus - SCBA should be used inside encapsulating suit where this exposure may occur. Moderate hazard. ▸ Clear area of personnel and move upwind. ▸ 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.

6.4. Reference to other sections

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

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Safe handling	▸ Most acrylic monomers have low viscosity therefore pouring, material transfer and processing of these materials do not necessitate heating. ▸ Viscous monomers may require heating to facilitate handling. To facilitate product transfer from original containers, product must be heated to no more than 60 deg. C. (140 F.), for not more than 24 hours. ▸ Do NOT use localised heat sources such as band heaters to heat/ melt product. ▸ Do NOT use steam. ▸ Hot boxes or hot rooms are recommended for heating/ melting material. The hot box or hot room should be set a maximum temperature of 60 deg. C. (140 F.). ▸ Do NOT overheat - this may compromise product quality and /or result in an uncontrolled hazardous polymerisation. ▸ If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/ melting; avoid multiple "reheats" which may affect product quality or result in product degradation. ▸ Product should be packaged with inhibitor(s). Unless inhibited, product may polymerise, raising temperature and pressure, possibly rupturing container. Check inhibitor level periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do NOT blanket or mix with oxygen-free gas as it renders the inhibitor ineffective. Ensure air space (oxygen) is present during product heating / melting.

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	▸ Store product indoors at temperatures greater than the product's freeing point (or greater than 0 deg. C. (32 F).) if no freezing point available and below 38 deg. C (100 F.). ▸ Avoid prolonged storage (longer than shelf-life) storage temperatures above 38 deg. C (100 F.). ▸ Store in tightly closed containers in a properly vented storage area away from heat, sparks, open flame, strong oxidisers, radiation and other initiators. ▸ Prevent contamination by foreign materials. ▸ Prevent moisture contact. ▸ Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt. ▸ **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.
Fire and explosion protection	See section 5
Other information	▸ Polymerisation may occur slowly at room temperature. ▸ Storage requires stabilising inhibitor content and dissolved oxygen content to be monitored. Refer to manufacturer's recommended levels. ▸ **DO NOT** overfill containers so as to maintain free head space above product. ▸ Blanketing or sparging with nitrogen or oxygen free gas will deactivate stabiliser. ▸ Store below 38 deg. C. ▸ Store in original containers. ▸ Keep containers securely sealed. ▸ No smoking, naked lights or ignition sources. ▸ 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. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	For acrylates or methacrylates: Storage tanks and pipes should be made of stainless steel or aluminium. Although they do not corrode carbon steel, there is a risk of contamination if corrosion does occur. ▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▸ Polymerisation may occur slowly at room temperature. ▸ Storage requires stabilising inhibitor content and dissolved oxygen content to be monitored. Refer to manufacturer's recommended levels. ▸ **DO NOT** overfill containers so as to maintain free head space above product. ▸ Blanketing or sparging with nitrogen or oxygen free gas will deactivate stabiliser. ▸ Store below 38 deg. C. ▸ Avoid strong acids, bases.
Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)	Not Available
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	Not Available

7.3. Specific end use(s)

See section 1.2

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SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
3,3,5-trimethylcyclohexyl methacrylate	Dermal 46.7 mg/kg bw/day (Systemic, Chronic) Inhalation 16.45 mg/m³ (Systemic, Chronic) ***Dermal 16.7 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 2.9 mg/m³ (Systemic, Chronic) **** ***Oral 1.67 mg/kg bw/day (Systemic, Chronic) ****	1.9 µg/L (Water (Fresh)) 19 µg/L (Water - Intermittent release) 0.19 µg/L (Water (Marine)) 0.141 mg/kg sediment dw (Sediment (Fresh Water)) 0.014 mg/kg sediment dw (Sediment (Marine)) 0.027 mg/kg soil dw (Soil) 100 mg/L (STP)
ethylene glycol dimethacrylate	Dermal 1.3 mg/kg bw/day (Systemic, Chronic) Inhalation 2.45 mg/m³ (Systemic, Chronic) ***Dermal 0.83 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 1.45 mg/m³ (Systemic, Chronic) **** ***Oral 0.83 mg/kg bw/day (Systemic, Chronic) ****	0.069 mg/L (Water (Fresh)) 0.15 mg/L (Water - Intermittent release) 0.007 mg/L (Water (Marine)) 0.411 mg/kg sediment dw (Sediment (Fresh Water)) 0.041 mg/kg sediment dw (Sediment (Marine)) 0.042 mg/kg soil dw (Soil) 57 mg/L (STP)
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	Dermal 1.28 mg/kg bw/day (Systemic, Chronic) Inhalation 3.6 mg/m³ (Systemic, Chronic) ***Dermal 0.64 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 0.65 mg/m³ (Systemic, Chronic) **** ***Oral 0.64 mg/kg bw/day (Systemic, Chronic) ****	0.04 mg/L (Water (Fresh)) 0.3 mg/L (Water - Intermittent release) 0.004 mg/L (Water (Marine)) 149000 mg/kg sediment dw (Sediment (Fresh Water)) 14900 mg/kg sediment dw (Sediment (Marine)) 29700 mg/kg soil dw (Soil) 10 mg/L (STP)
diphenyl(2,4,6-trimethylbenzoyl)phosphine	Dermal 0.233 mg/kg bw/day (Systemic, Chronic) Inhalation 0.822 mg/m³ (Systemic, Chronic) ***Dermal 83.3 µg/kg bw/day (Systemic, Chronic) **** ***Inhalation 0.145 mg/m³ (Systemic, Chronic) **** ***Oral 83.3 µg/kg bw/day (Systemic, Chronic) ****	1.4 µg/L (Water (Fresh)) 14 µg/L (Water - Intermittent release) 0.14 µg/L (Water (Marine)) 0.115 mg/kg sediment dw (Sediment (Fresh Water)) 11.5 µg/kg sediment dw (Sediment (Marine)) 22.2 µg/kg soil dw (Soil)
2,6-di-tert-butyl-4-methylphenol	Dermal 0.5 mg/kg bw/day (Systemic, Chronic) Inhalation 1.76 mg/m³ (Systemic, Chronic) ***Dermal 0.25 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 0.435 mg/m³ (Systemic, Chronic) **** ***Oral 0.25 mg/kg bw/day (Systemic, Chronic) ****	0.199 µg/L (Water (Fresh)) 1.99 µg/L (Water - Intermittent release) 0.02 µg/L (Water (Marine)) 0.458 mg/kg sediment dw (Sediment (Fresh Water)) 0.046 mg/kg sediment dw (Sediment (Marine)) 0.054 mg/kg soil dw (Soil) 0.017 mg/L (STP) 16.67 mg/kg food (Oral)
styrene	Dermal 406 mg/kg bw/day (Systemic, Chronic) Inhalation 85 mg/m³ (Systemic, Chronic) Inhalation 100 mg/m³ (Local, Chronic) Inhalation 100 mg/m³ (Systemic, Acute) Inhalation 100 mg/m³ (Local, Acute) ***Dermal 343 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 1 mg/m³ (Systemic, Chronic) **** ***Oral 2.1 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 1 mg/m³ (Local, Chronic) **** ***Inhalation 10 mg/m³ (Systemic, Acute) **** ***Inhalation 10 mg/m³ (Local, Acute) ****	0.028 mg/L (Water (Fresh)) 0.04 mg/L (Water - Intermittent release) 0.014 mg/L (Water (Marine)) 0.418 mg/kg sediment dw (Sediment (Fresh Water)) 0.307 mg/kg sediment dw (Sediment (Marine)) 0.146 mg/kg soil dw (Soil) 5 mg/L (STP)
toluene	Dermal 384 mg/kg bw/day (Systemic, Chronic) Inhalation 192 mg/m³ (Systemic, Chronic) Inhalation 192 mg/m³ (Local, Chronic) Inhalation 384 mg/m³ (Systemic, Acute) Inhalation 384 mg/m³ (Local, Acute) ***Dermal 226 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 56.5 mg/m³ (Systemic, Chronic) **** ***Oral 8.13 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 56.5 mg/m³ (Local, Chronic) **** ***Inhalation 226 mg/m³ (Systemic, Acute) **** ***Inhalation 226 mg/m³ (Local, Acute) ****	0.68 mg/L (Water (Fresh)) 0.68 mg/L (Water - Intermittent release) 0.68 mg/L (Water (Marine)) 1.78 mg/kg sediment dw (Sediment (Fresh Water)) 0.178 mg/kg sediment dw (Sediment (Marine)) 0.313 mg/kg soil dw (Soil) 0.84 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

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Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Netherlands Occupational Exposure Limits	toluene	Tolueen	150 mg/m3	384 mg/m3	Not Available	A
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	toluene	Toluene	50 ppm / 192 mg/m3	384 mg/m3 / 100 ppm	Not Available	Skin

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
ethylene glycol dimethacrylate	9.9 mg/m3	110 mg/m3	650 mg/m3
glycerol	45 mg/m3	180 mg/m3	1,100 mg/m3
styrene	Not Available	Not Available	Not Available
toluene	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
UDMA	Not Available	Not Available
3,3,5-trimethylcyclohexyl methacrylate	Not Available	Not Available
ethylene glycol dimethacrylate	Not Available	Not Available
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	Not Available	Not Available
glycerol	Not Available	Not Available
diphenyl(2,4,6-trimethylbenzoyl)phosphine	Not Available	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available	Not Available
diethyl 2,5-dihydroxyterephthalate	Not Available	Not Available
styrene	700 ppm	Not Available
toluene	500 ppm	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
UDMA	E	≤ 0.01 mg/m³
3,3,5-trimethylcyclohexyl methacrylate	E	≤ 0.1 ppm
ethylene glycol dimethacrylate	E	≤ 0.1 ppm
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	D	> 0.01 to ≤ 0.1 mg/m³
glycerol	E	≤ 0.1 ppm
diphenyl(2,4,6-trimethylbenzoyl)phosphine	E	≤ 0.01 mg/m³
2,6-di-tert-butyl-4-methylphenol	E	≤ 0.01 mg/m³
diethyl 2,5-dihydroxyterephthalate	E	≤ 0.01 mg/m³
styrene	E	≤ 0.1 ppm
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.***	

8.2. Exposure controls

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8.2.1. Appropriate engineering controls

- All processes in which isocyanates are used should be enclosed wherever possible.
- Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards.
- If total enclosure of the process is not feasible, local exhaust ventilation may be necessary. Local exhaust ventilation is essential where lower molecular weight isocyanates (such as TDI or HDI) is used or where isocyanate or polyurethane is sprayed.
- Where other isocyanates or pre-polymers are used and aerosol formation cannot occur, local exhaust ventilation may not be necessary if the atmospheric concentration can be kept below the relevant exposure standards.
- Where local exhaust ventilation is installed, exhaust vapours should not be vented to the exterior in such a manner as to create a hazard.

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.

- Spraying of material or material in admixture with other components must be carried out in conditions conforming to local state regulations (AS/NZS 4114, UNI EN 12215:2010, ANSI/AIHA Z9.3–2007 or national equivalent).
- Local exhaust ventilation with full face positive-pressure air supplied breathing apparatus (hood or helmet type) is required.
- Spraying should be performed in a spray booth fitted with an effective exhaust system which complies with local environmental legislation.
- The spray booth area must be isolated from unprotected personnel whilst spraying is in progress and until all spraying mist has cleared.

NOTE: Isocyanate vapours will not be adequately absorbed by organic vapour respirators. 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:
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

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 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 4-10 m/s (800-2000 f/min.) for extraction of solvents generated by spraying at a point 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.

8.2.2. 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

Hands/feet protection

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.

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.

Continued...

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,
· 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.
General warning: Do NOT use latex gloves! Use only recommended gloves - using the wrong gloves may increase the risk:

Exposure condition Short time use; (few minutes less than 0.5 hour) Little physical stress	Use of thin nitrile rubber gloves: Nitrile rubber (0.1 mm) Excellent tactibility ("feel"), powder-free Disposable Inexpensive Give adequate protection to low molecular weigh acrylic monomers
Exposure condition Medium time use; less than 4 hours Physical stress (opening drums, using tools, etc.)	Use of medium thick nitrile rubber gloves Nitrile rubber, NRL (latex) free; <0.45 mm Moderate tactibility ("feel"), powder-free Disposable Moderate price Gives adequate protection for most acrylates up to 4 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour
Exposure condition Long time Cleaning operations	Nitrile rubber, NRL (latex) free; >0.56 mm low tactibility ("feel"), powder free High price Gives adequate protection for most acrylates in combination with commonly used solvents up to 8 hours Do NOT give adequate protection to low molecular weight monomers at exposures longer than 1 hour Avoid use of ketones and acetates in wash-up solutions.

Where none of this gloves ensure safe handling (for example in long term handling of acrylates containing high levels of acetates and/ or ketones, use laminated multilayer gloves.
Guide to the Classification and Labelling of UV/EB Acrylates Third edition, 231 October 2007 - Cefic

- Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.
- Protective gloves and overalls should be worn as specified in the appropriate national standard.
- Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.
- NOTE: Natural rubber, neoprene, PVC can be affected by isocyanates

Body protection	See Other protection below
Other protection	All employees working with isocyanates must be informed of the hazards from exposure to the contaminant and the precautions necessary to prevent damage to their health. They should be made aware of the need to carry out their work so that as little contamination as possible is produced, and of the importance of the proper use of all safeguards against exposure to themselves

Continued...

and their fellow workers. Adequate training, both in the proper execution of the task and in the use of all associated engineering controls, as well as of any personal protective equipment, is essential.
Employees exposed to contamination hazards should be educated in the need for, and proper use of, facilities, clothing and equipment and thereby maintain a high standard of personal cleanliness. Special attention should be given to ensuring that all personnel understand instructions, especially newly recruited employees and those with local-language difficulties, where they are known.

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

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Lucitone Digital IPN™ 3D Premium Tooth and Primeprint Lucitone Digital IPN™ 3D Premium Tooth

Material	CPI
BUTYL	C
CPE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/CHLOROBUTYL	C
VITON/NEOPRENE	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

For spraying or operations which might generate aerosols:
Avoid inhalation.
Full face respirator with supplied air.

- In certain circumstances, personal protection of the individual employee is necessary. Personal protective devices should be regarded as being supplementary to substitution and engineering control and should not be used in preference to them as they do nothing to eliminate the hazard.
- However, in some situations, minimising exposure to isocyanates by enclosure and ventilation is not possible, and occupational exposure standards may be exceeded, particularly during on-site mixing of paints, spray-painting, foaming and maintenance of machine and ventilation systems. In these situations, air-line respirators or self-contained breathing apparatus complying with the appropriate nationals standard must be used.
- Organic vapour respirators with particulate pre- filters and powered, air-purifying respirators are NOT suitable.
- Personal protective equipment must be appropriately selected, individually fitted and workers trained in their correct use and maintenance. Personal protective equipment must be regularly checked and maintained to ensure that the worker is being protected.
- Air- line respirators or self-contained breathing apparatus complying with the appropriate national standard should be used during the clean-up of spills and the repair or clean-up of contaminated equipment and similar situations which cause emergency exposures to hazardous atmospheric concentrations of isocyanate.

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Tooth coloured viscous liquid.

Continued...

Physical state	Liquid	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Applicable	**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
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
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. No report of respiratory illness in humans as a result of exposure to multifunctional acrylates has been found. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure. Sensitized people can react to very low doses, and should not be allowed to work in situations allowing exposure to this material. Continued exposure of sensitised persons may lead to possible long term respiratory impairment. Inhalation hazard is increased at higher temperatures.
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	This material can cause inflammation of the skin on contact in some persons.

Continued...

	The material may accentuate any pre-existing dermatitis condition All multifunctional acrylates (MFA) produce skin disorders and sensitise the skin and inflammation. Vapours generated by the heat of milling may occur in sufficient concentration to produce inflammation. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm. Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. The chemistry of reaction of isocyanates, as evidenced by MDI, in biological milieu is such that in the event of a true exposure of small MDI doses to the mouth, reactions will commence at once with biological macromolecules in the buccal region and will continue along the digestive tract prior to reaching the stomach. Reaction products will be a variety of polyureas and macromolecular conjugates with for example mucus, proteins and cell components. This is corroborated by the results from an MDI inhalation study. Following an inhalation exposure of rats to radiolabelled MDI, 79% of the dose was excreted in faeces. The faecal excretion in these animals was considered entirely due to ingestion of radioactivity from grooming and ingestion of deposited material from the nasopharangeal region via the mucociliary escalator, i.e. not following systemic absorption. The faecal radioactivity was tentatively identified as mixed molecular weight polyureas derived from MDI. Diamine was not present. Thus, for MDI and diisocyanates in general the oral gavage dosing route is inappropriate for toxicological studies and risk assessment. It is expected that oral gavage dosing will result in a similar outcome to that produced by TDI or MDI, that is (1) reaction with stomach contents and (2) polymerization to solid polyureas. ▸ Reaction with stomach contents is very plausibly described in case reports of accidental ingestion of polymeric MDI based glue in domestic animals. Extensive polymerization and CO2 liberation resulting in an expansion of the gastric content is described in the stomach, without apparent acute chemical toxicity ▸ Polyurea formation in organic and aqueous phases has been described. In this generally accepted chemistry of hydrolysis of an isocyanate the initially produced carbamate decarboxylates to an amine which. The amine, as a reactive intermediate, then reacts very readily with the present isocyanate to produce a solid and inert polyurea. This urea formation acts as a pH buffer in the stomach, thus promoting transformation of the diisocyanate into polyurea, even under the acidic conditions. At the resorbtive tissues in the small intestine, these high molecular reaction products are likely to be of very low bioavailability, which is substantiated by the absence of systemic toxicity in acute oral bioassays with rats at the OECD limit dose (LC50>2 g/kg bw). The respiratory tract may be regarded as the main entry for systemically available isocyanates as evidenced following MDI exposures. A detailed summary on urinary, plasma and in vitro metabolite studies is provided below. Taken together, all available studies provide convincing evidence that MDI-protein adduct and MDI-metabolite formation proceeds: ▸ via formation of a labile isocyanate glutathione (GSH)-adduct, ▸ then transfer to a more stable adduct with larger proteins, and ▸ without formation of free MDA. MDA reported as a metabolite is actually formed by analytical workup procedures (strong acid or base hydrolysis) and is not an identified metabolite in urine or blood

Lucitone Digital IPN™ 3D Premium Tooth and Primeprint Lucitone Digital IPN™ 3D Premium Tooth	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
UDMA	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
3,3,5-trimethylcyclohexyl methacrylate	**TOXICITY**	**IRRITATION**
	Not Available	Eye: no adverse effect observed (not irritating)[1]
		Skin: adverse effect observed (irritating)[1]
ethylene glycol dimethacrylate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Mouse) LD50; 2000 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]

Continued...

3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation (Rat) LC50: >0.667 mg/l4h[1]	Skin: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: >10000 mg/kg[2]	
glycerol	**TOXICITY**	**IRRITATION**
	Dermal (Guinea Pig) LD50: 58500 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation (Rat) LC50: >5.85 mg/L4h[1]	Skin: no adverse effect observed (not irritating)[1]
	Oral (Mouse) LD50; 4090 mg/kg[2]	
diphenyl(2,4,6-trimethylbenzoyl)phosphine	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): non-irritating *
	Oral (Rat) LD50: >5000 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
		Skin (rabbit): non-irritating *
		Skin: no adverse effect observed (not irritating)[1]
2,6-di-tert-butyl-4-methylphenol	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg[2]	Eye (rabbit): 100 mg/24h-moderate
	Oral (Rat) LD50: 890 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
		Skin (human): 500 mg/48h - mild
		Skin (rabbit):500 mg/48h-moderate
		Skin: no adverse effect observed (not irritating)[1]
diethyl 2,5-dihydroxyterephthalate	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
styrene	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): 100 mg/24h - moderate
	Inhalation(Mouse) LC50; 9.5 mg/L4h[2]	Eye (rabbit): 100 mg/24h - moderate
	Oral (Mouse) LD50; 316 mg/kg[2]	Skin (rabbit): 500 mg - mild
		Skin (rabbit): 500 mg - mild
toluene	**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
		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:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

UDMA	Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. This group of compounds has therefore been classified as cancer-causing.

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ETHYLENE GLYCOL DIMETHACRYLATE	UV (ultraviolet) / EB (electron beam) acrylates are generally of low toxicity. UV/EB acrylates are divided into two groups the “stenomeric” and “eurymeric” acrylates. Stenomeric acrylates are usually more hazardous than the eurymeric substances.
3,5-BIS(BUTYL)-4-HYDROXYHYDROCINNAMIC STEARATE	For 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate Teratogenicity/Reproductive Toxicity: 2-Generation study (Rats): The test substance was fed in the diet at concentrations of 0, 500, 1,500 and 5,000 ppm. Treatment of the F0 males and females began when they were six weeks of age, and continued until all Fl litters had been weaned. Direct treatment of the Fl males and females began when they were 4 weeks of age, and continued until all F2 litters had been weaned. Findings at 5,000 ppm among adults of both generations (F0 and F1) that appeared to be treatment-related were as follows: a. Slight reductions in food consumption, weekly weight gain and weight gain of females during pregnancy. b. Statistically significant increases in liver weight and reduction in spleen weight. Histological examination of livers from Fl adult animals showed minimal centrilobular hepatocyte enlargement. c. In the F0 generation, initial litter size was reduced. Post-partum pup loss was increased and pup weight gain reduced. d. In the F1 generation initial litter size was again reduced. There was no pup loss. Pup-weight gain was slightly lower than among control animals despite the smaller litter size and hence reduced intra-litter competition. Organ weight analyses of selected Fl and F2 weanlings showed significantly increased liver weights and reduced spleen weights. Histological examination of these tissues from F2 weanlings showed no treatment-related changes. Mating performance, pregnancy rate and the duration of gestation at all three dietary concentrations were unaffected by treatment. The overall NOEL is below 500 ppm due to the increased liver weight and reductions in spleen weight reported among selected Fl and F2 weanlings of the intermediate and low dose group. Segment II study (Rats): Test substance was administered by gavage to pregnant rats from day 6 to 15 of gestation, inclusive. The concentrations were 0, 150, 500 and 1,000 mg/kg. Bodyweight gain was slightly depressed in the 500 and 1,000 mg/kg dose levels and reduced feed intake was registered in a dose related fashion during the period of administration of the test substance. Retardation of physiological growth of the fetuses was recorded. No teratogenic effects were observed under the conditions of the experiment. The 150 mg/kg dose was considered to be the no observable effect level (NOEL). Segment II study (Mice): Test substance was administered by gavage to pregnant mice from day 6 to 15 of gestation, inclusive. The concentrations were 150, 500 and 1,000 mg/kg. The average bodyweight gain as well as feed intake were comparable for all groups. There was no evidence of an adverse effect on the embryonic or fetal development in the mouse, except that, in the high-dose group, the average weight of the fetuses was found to be slightly but significantly increased when compared with the control. No teratogenic effects were observed under the conditions of the experiment. The NOEL was considered to be 500 mg/kg. Subchronic Toxicity: (Dogs): In a 3-month toxicity study, Beagle dogs were fed a diet containing 0, 1,000, 3,000 and 10,000 ppm of the test substance. No clinical symptoms or signs of systemic toxicity were observed and no deaths occurred during the experiment. Ophthalmic inspection, hearing test, food consumption, bodyweight gain, mean food conversion, haematology, blood chemistry, gross pathology and histopathology revealed no treatment related effects. The occasionally elevated concentrations of serum bilirubin levels were not accompanied by any histopathological changes in the liver. Organ weights and ratios for the treated dogs were comparable to those of the control animals with the exception of a slightly increased incidence of higher liver weights and ratios in the dogs of the 3,000 and 10,000 ppm groups. The NOEL was concluded to be 1,000 ppm in the diet, corresponding to 31.5 - 34.5 mg/kg/day. (Rats): The test substance was administered to rats as an aerosol (dust) for 6 hours/day, 5 days/week for 3 weeks. The animals were exposed to mean gravimetric concentrations of 23 and 543 mg/m3. There were no reactions to treatment for any of the parameters investigated. The NOEL is greater than 543 mg/m3. air for male and female rats. Chronic Toxicity/Carcinogenicity: (Mice): Mice were administered 0, 5, 50, 500 ppm of the test substance in the feed, corresponding to a mean daily intake of about 56 mg/kg/day for the highest dose group for 24 months. The only difference seen was reduced survival time for the high dose animals. There was no evidence of an increased tumor incidence. The NOEL was 50 ppm. (Rats): In a 104 week/feeding study, rats were treated with the test substance in the diet at levels of 0, 500, 1,500, 5,000 ppm. Reaction to treatment at the various dietary levels was as follows: At 5,000 ppm: a. A higher survival rate among females (Mindfully note: which means a lower survival rate for males). b. An inferior bodyweight gain and reduced food intake associated with a minor impairment in the efficiency of food utilization among females. c. Increased liver and thyroid weights in males and females and decreased adrenal weights in females. At 1,500 ppm: a. A reduction in food intake among male rats between weeks 53 and 80 and among females during the first 80 weeks of treatment. b. Decreased adrenal weight in females. At 500 ppm: A reduction in food intake among male and female rats between weeks 53 and 80. There was no evidence of an increased tumor incidence. The NOEL was concluded to be 500 ppm. Absorption/Distribution/Excretion Metabolism 10 mg/kg of radiolabeled test substance was administered by gavage to 4 albino rats after a 12-hour fast (water permitted). The animals were then placed in metabolism cages for 168 hours and urine and feces samples were collected. Within 0-48 hours after administration about 73%n of the radioactivity was eliminated from the body. Afterwards, elimination proceeded slowly and was not fully completed at 168 hours. At that time 96% of the radioactivity was recovered (35% in the urine, 61% in the feces). Other Toxicity Data: 4-week oral toxicity study (Young rats): Fifty young (4 week old) rats were treated by gavage with single daily doses of 0, 5, 30, 100 and 300 mg/kg of the test substance for 28 days. The liver was the target organ as indicated by a dose-dependent organ weight increase and by histopathology: at 300 mg/kg a minimal centrilobular hepatocytic hypertrophy was observed. A small number of high dose animals showed clinical chemistry changes, including elevated transaminase activities and cholesterol levels compared to control animals. The NOEL was considered to be 30 mg/kg/day.
GLYCEROL	At very high concentrations, evidence predicts that glycerol may cause tremor, irritation of the skin, eyes, digestive tract and airway. Otherwise it is of low toxicity. There is no significant evidence to suggest that it causes cancer, genetic, reproductive or developmental toxicity.
2,6-DI-TERT-BUTYL-4-METHYLPHENOL	* Degussa SDS Effects such as behavioral changes, reduction in body weight gain, and decrement in body weight have been observed after long-term administration of BHT to mice and rats. Toxic effects may be attributed more to BHT metabolites than to their parent compound, only a few studies have focused on their carcinogenicity and toxicity, and not only on that of BHT. The metabolite BHT-QM (syn: 2,6-di-tert-butyl-1,4-methylene-2,5-cyclohexadien-1-one, CAS RN: 2607-52-5) is a very reactive compound which is considered to play a significant role in hepatoxicity, pneumotoxicity, and skin tumor promotion in mice. In addition, it was reported that another quinone derivative, BHT-OH(t)QM (syn 2-tert-butyl-6-(2-hydroxy-tert-butyl-4-methylene-2,5-cyclohexadien-1-one, CAS RN: 124755-19-7), is chemically more reactive than BHT-QM, and it has been recognized as the principal metabolite responsible for lung tumor promotion activity of BHT in mice. BHT has been reported to exert prooxidant effects under certain conditions. Thus, when BHT was added in excess to a wheat seedling medium in aerobic conditions, an enhancement of the generation rate of superoxide anion was observed. This is a reactive particle that

Continued...

may damage cellular structures at high concentrations In addition, an increase in hepatic microsomal lipid peroxidation was observed in rats fed with diets containing 0.2% of BHT for 30 days. Due to this ability of BHT to exert prooxidant effects at high concentrations, it has been used to induce experimental models of oxidative stress in several animals and fungi in order to study the protective effects of other compounds. Quinone methide derivatives form adducts with several proteins, including enzymes that protect cells from oxidative stress; this prooxidant state can also lead to cell oxidative damage. It must be noted that relationships between chronic oxidative stress and tumor promotion are well known Some authors have reported that at high aeration rate, BHT can react with molecular oxygen rather than with the reactive oxygen species present, yielding BHT-phenoxyl radical and superoxide anion. In addition, the phenolic radical itself may undergo redox recycling which can be a critical factor depending on the reductant involved However, it has to be noted that BHT-phenoxyl radical has been reported to be relatively stable. Furthermore, the potential reactivity of BHT-derived metabolites should be taken into account; some studies reported that not only BHT but also its metabolites, such as BHT-Q and BHT-QM, can act as prooxidant. As BHT undergoes several reactions during biotransformation, a large number of intermediate metabolites have been identified. However, their nature and concentration depend on the environmental conditions and on the animal species. Although the changes undergone by BHT during in vivo digestion processes have not been studied, after submission of a fluid deep-frying fat containing BHT and BHT-QM to an in vitro gastrointestinal digestion model, both these were detected in the digested samples. These results indicate that BHT and its toxic metabolite could remain bioaccessible for intestinal absorption.
Studies concerning BHT metabolism have shown that, unlike other synthetic antioxidants, BHT is a potent inducer of the microsomal monooxygenase system and its major route of degradation is oxidation catalyzed by cytochrome P450. Studies have reported potential toxicity derived from the ingestion or administration of BHT. As for acute oral toxicity, although this is considered low in animals, it must be noted that 2 clinical cases were reported in patients who suffered acute neurotoxicity and gastritis after ingesting a high dose of BHT (4 and 80 g without medical prescription) to cure recurrent genital herpes.
Regarding short-term subchronic toxicity studies, it has been reported that BHT causes dose-related increase in the incidence and severity of toxic nephrosis in mice, nephrotoxicity and pneumotoxicity in rats, and in chicken a marked congestion of the liver and kidney, as well as diffuse enlargement of the liver with rounded borders and rupture with hemorrhaging . It has to be noted that the EFSA Panel (2012) pointed out certain inconsistencies in the findings obtained from the short-term and subchronic toxicity studies. Several genotoxicity studies on BHT concluded that BHT does not represent a genotoxic risk, because most of the studies carried out to that date had shown BHT was not able to induce mutations or to damage deoxyribonucleic acid (DNA). Nevertheless, it must be mentioned that other studies reported contrary results. The effect of BHT and 7 of its metabolites on in vitro DNA cleavage was studied and the metabolites BHT-Q (syn: 2,6-di-tert-butyl-2,5-cyclohexadiene-1,4-dione, CAS RN: 719-22-2), BHT-CHO (syn: 3,5-di-tert-butyl-4-hydroxybenzaldehyde, CAS RN: 1620-98-0 and BHT-OOH (syn: 2,6-di-tert-butyl-4-methyl-4-hydroperoxy-2,5-cyclohexadien-1-one, CAS RN: 6485-57-0) were able to cleave DNA.. The Panel on Food Additives and Nutrient Sources Added to Food of the European Food Safety Authority (EFSA) recognized that these positive genotoxicity results may be due to the prooxidative chemistry of BHT, which gives rise to reactive metabolites. Some studies addressed the carcinogenicity and chronic toxicity of BHT and its metabolites in rodents with contradictory results. Thus, mice-fed dietary BHT for a year developed marked hyperplasia of the hepatic bile ducts with an associated subacute cholangitis Moreover, after 104 wk of administration of BHT, the formation of hepatocellular tumors in male mice was observed. After 10 months of feeding mice with a diet containing different amounts of BHT, an increased incidence of liver tumors in male, but not female, animals was also reported . However, in a similar study no evidence of the carcinogenicity of BHT administered to mice was observed. Studies performed in rats also reported dose-related increases in hepatocellular adenomas and carcinomas; nevertheless, other studies carried out with rats showed no consistent carcinogenic effects. Several studies have demonstrated the potential of BHT to act either as a tumor promotor or as a tumor suppressor, modulating the carcinogenicity of some well-known carcinogens. Barbara Nieva-Echevarria etal: Comprehensive reviews in Food Science and Food Safety, Vol 14, Dec 2014 http://onlinelibrary.wiley.com/doi/10.1111/1541-4337.12121/pdf
Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.
for bridged alkyl phenols:
Acute toxicity: Acute oral and dermal toxicity data are available for all but two of the substances in the group. The data show that acute toxicity of these substances is low. The testing for acute toxicity spans five decades
Repeat dose toxicity: Repeat dose studies on the members of this category include both subchronic and chronic exposures. The liver is identified as the target organ in rats for all of the substances tested. NOAEL s or NOEL s in rats for 13- week studies ranged from 100 ppm (approximately 5 mg/kg/day) to 500 ppm (approximately 25 mg/kg/day) while NOAEL s or NOEL s in rats for chronic studies were the same, 25 mg/kg/day (500 ppm).
Reproductive toxicity: Evaluation of effects on reproduction for the bridged alkyl phenols is supplemented by histopathological data on male and female reproductive organs in repeated dose studies. The data on the effects of bridged alkyl phenols on reproduction and reproductive organs span the range of structures and molecular weights. While not all of the data for reproductive effects are from reproduction studies, microscopic evaluations of reproductive organs along with other short-term tests for reproductive effects provide adequate data to evaluate the effects of these bridged alkyl phenols on reproduction It can be concluded that reproductive toxicity is low.
Typically a two-year chronic feeding study provides data for 4,4'-thiobis-6-(t-butyl-m-cresol) (96-69-5). No adverse effects were noted on reproductive organs
Genotoxicity: Data from bacterial reverse mutation assays and in vitro and in vivo chromosome aberration studies were reviewed. Adequate bacterial gene mutation assays have been conducted with all of the category chemicals except two. Chromosome aberration studies, in vitro and/or in vivo, are available for all but two substances. The mutagenicity data span the range of structures and molecular weights and data can be bridged from other members of the group to meet any outstanding requirements. The weight of evidence for mutagenic potential for this category indicates these substances are not mutagenic.
Carcinogenicity: The mutagenicity data combined with the animal data plus the long historical use of BHT (128-37-0) indicate that the chemicals in this class are not expected to exhibit any significant potential to cause cancer. The weight of the evidence indicates that these chemicals are not genotoxic.
The Bridged Alkyl Phenols Category consists of a group of chemicals in which two molecules of mono or di-substituted alkyl (C1, C4, and/or C9) phenols are “bridged” or linked by a single atom (carbon or sulfur). The carbon atom linking the alkyl

Continued...

	phenol groups contains hydrogen, propyl, or methyl substitutions. CAS No. 128-37-0 (BHT) is included in this category for data purposes because it is an alkyl phenol with a single carbon group such as the ones that link the phenol groups ferroptosis inhibitors are currently being treated systemically rather than specifically, which may have multiple side effects. For example,Desferoxamin (DFO), an iron chelating agent, is known to have a short half-life, need long-term subcutaneous infusions, and provoke ototoxicity and neurotoxicity. Deferasirox (DFX), an iron chelator, is associated with gastrointestinal and renal toxicity . The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
STYRENE	**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
TOLUENE	For toluene: 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.
UDMA & 3,3,5-TRIMETHYLCYCLOHEXYL METHACRYLATE & ETHYLENE GLYCOL DIMETHACRYLATE & GLYCEROL & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL & DIETHYL 2,5-DIHYDROXYTEREPHTHALATE	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.
UDMA & 3,3,5-TRIMETHYLCYCLOHEXYL METHACRYLATE & DIETHYL 2,5-DIHYDROXYTEREPHTHALATE	No significant acute toxicological data identified in literature search.
UDMA & ETHYLENE GLYCOL DIMETHACRYLATE	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.
3,3,5-TRIMETHYLCYCLOHEXYL METHACRYLATE & ETHYLENE GLYCOL DIMETHACRYLATE	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

Continued...

ETHYLENE GLYCOL DIMETHACRYLATE & 3,5-BIS(BUTYL)-4-HYDROXYHYDROCINNAMIC STEARATE & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL & DIETHYL 2,5-DIHYDROXYTEREPHTHALATE	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.
3,5-BIS(BUTYL)-4-HYDROXYHYDROCINNAMIC STEARATE & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL	Data show that acute toxicity following oral and topical use of hindered phenols is low. They are not proven to cause mutations. However, long term use may affect the liver, thyroid, kidney and lymph nodes. Liver tumours have been reported.
2,6-DI-TERT-BUTYL-4-METHYLPHENOL & STYRENE & TOLUENE	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	✗	**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***

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

Lucitone Digital IPN™ 3D Premium Tooth and Primeprint Lucitone Digital IPN™ 3D Premium Tooth

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

UDMA

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

3,3,5-trimethylcyclohexyl methacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	48h	Crustacea	14.43mg/l	2
LC50	96h	Fish	1.9mg/l	2
ErC50	72h	Algae or other aquatic plants	>0.89mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	0.22mg/l	2
EC50	72h	Algae or other aquatic plants	>0.59mg/l	2

ethylene glycol dimethacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	96h	Algae or other aquatic plants	0.804mg/l	2
EC50	72h	Algae or other aquatic plants	17.3mg/l	2
EC50	96h	Algae or other aquatic plants	10.1mg/l	2
EC50	48h	Crustacea	44.9mg/l	2
LC50	96h	Fish	15.95mg/l	2

Continued...

3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	BCF	1008h	Fish	<1.2-8.4	7
	NOEC(ECx)	72h	Algae or other aquatic plants	30mg/l	1
	EC50	72h	Algae or other aquatic plants	>30mg/l	1
	LC50	96h	Fish	>100mg/l	Not Available
glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC0(ECx)	24h	Crustacea	>500mg/l	1
	LC50	96h	Fish	>11mg/L	2
diphenyl(2,4,6-trimethylbenzoyl)phosphine	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	NOEC(ECx)	96h	Fish	1mg/l	2
	EC50	72h	Algae or other aquatic plants	>2.01mg/l	2
	EC50	48h	Crustacea	3.53mg/l	2
	LC50	96h	Fish	10-100mg/l	Not Available
2,6-di-tert-butyl-4-methylphenol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	ErC50	72h	Algae or other aquatic plants	>0.42mg/l	1
	LC50	96h	Fish	>0.5mg/l	Not Available
	BCF	1344h	Fish	220-2800	7
	EC50	72h	Algae or other aquatic plants	>0.42mg/l	1
	EC50	48h	Crustacea	>0.17mg/l	2
	EC0(ECx)	48h	Crustacea	>=0.31mg/l	1
	EC50	96h	Algae or other aquatic plants	0.758mg/l	2
diethyl 2,5-dihydroxyterephthalate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
styrene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	72h	Algae or other aquatic plants	1.4mg/l	1
	LC50	96h	Fish	3.29-5.05mg/L	4
	EC50	48h	Crustacea	4.7mg/l	1
	NOEC(ECx)	96h	Algae or other aquatic plants	0.063mg/l	1
	EC50	96h	Algae or other aquatic plants	0.72mg/l	1
toluene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	72h	Algae or other aquatic plants	12.5mg/L	4
	LC50	96h	Fish	5-35mg/l	4
	EC50	48h	Crustacea	3.78mg/L	5
	NOEC(ECx)	168h	Crustacea	0.74mg/l	2
	EC50	96h	Algae or other aquatic plants	>376.71mg/L	4
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***				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Continued...

Ingredient	Persistence: Water/Soil	Persistence: Air
3,3,5-trimethylcyclohexyl methacrylate	HIGH	HIGH
ethylene glycol dimethacrylate	LOW	LOW
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	HIGH	HIGH
glycerol	LOW	LOW
diphenyl(2,4,6-trimethylbenzoyl)phosphine	HIGH	HIGH
2,6-di-tert-butyl-4-methylphenol	HIGH	HIGH
diethyl 2,5-dihydroxyterephthalate	LOW	LOW
styrene	HIGH (Half-life = 210 days)	LOW (Half-life = 0.3 days)
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
3,3,5-trimethylcyclohexyl methacrylate	HIGH (LogKOW = 4.8334)
ethylene glycol dimethacrylate	LOW (LogKOW = 2.2088)
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	LOW (BCF = 12)
glycerol	LOW (LogKOW = -1.76)
diphenyl(2,4,6-trimethylbenzoyl)phosphine	MEDIUM (LogKOW = 3.8723)
2,6-di-tert-butyl-4-methylphenol	HIGH (BCF = 2500)
diethyl 2,5-dihydroxyterephthalate	LOW (LogKOW = 2.9408)
styrene	LOW (BCF = 77)
toluene	LOW (BCF = 90)

12.4. Mobility in soil

Ingredient	Mobility
3,3,5-trimethylcyclohexyl methacrylate	LOW (Log KOC = 850.9)
ethylene glycol dimethacrylate	LOW (Log KOC = 27.15)
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	LOW (Log KOC = 734400000)
glycerol	HIGH (Log KOC = 1)
diphenyl(2,4,6-trimethylbenzoyl)phosphine	LOW (Log KOC = 188300)
2,6-di-tert-butyl-4-methylphenol	LOW (Log KOC = 23030)
diethyl 2,5-dihydroxyterephthalate	LOW (Log KOC = 337.8)
styrene	LOW (Log KOC = 517.8)
toluene	LOW (Log KOC = 268)

12.5. Results of PBT and vPvB assessment

Continued...

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	▸ **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. Removal of bisphenol A (BPA) from aqueous solutions was accomplished by adsorption of enzymatically generated quinone derivatives on chitosan beads. The use of chitosan in the form of beads was found to be more effective because heterogeneous removal of BPA with chitosan beads was much faster than homogeneous removal of BPA with chitosan solutions, and the removal efficiency was enhanced by increasing the amount of chitosan beads dispersed in the BPA solutions and BPA was completely removed by quinone adsorption in the presence of chitosan beads more than 0.10 cm3/cm3. In addition, a variety of bisphenol derivatives were completely or effectively removed by the procedure constructed in this study, although the enzyme dose or the amount of chitosan beads was further increased as necessary for some of the bisphenol derivatives used. M. Suzuki, and E Musashi J Appl Polym Sci, 118(2):721 - 732; October 2010 ▸ **DO NOT** recycle spilled material. ▸ Consult State Land Waste Management Authority for disposal. ▸ Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal. ▸ **DO NOT** seal or stopper drums being decontaminated as CO_2 gas is generated and may pressurise containers. ▸ Puncture containers to prevent re-use. ▸ Bury or incinerate residues at an approved site.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. **UN number or ID number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	Class: Not Applicable Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard identification (Kemler): Not Applicable Classification code: Not Applicable

Continued...

Hazard Label	Not Applicable
Special provisions	Not Applicable
Limited quantity	Not Applicable
Tunnel Restriction Code	Not Applicable

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	ICAO/IATA Class: Not Applicable ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: Not Applicable Cargo Only Packing Instructions: Not Applicable Cargo Only Maximum Qty / Pack: Not Applicable Passenger and Cargo Packing Instructions: Not Applicable Passenger and Cargo Maximum Qty / Pack: Not Applicable Passenger and Cargo Limited Quantity Packing Instructions: Not Applicable Passenger and Cargo Limited Maximum Qty / Pack: Not Applicable

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	IMDG Class: Not Applicable IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	Not Applicable
14.5 **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: Not Applicable Special provisions: Not Applicable Limited Quantities: Not Applicable

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. **UN number**	Not Applicable
14.2. **UN proper shipping name**	Not Applicable
14.3. **Transport hazard class(es)**	Not Applicable | Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable

Continued...

14.6. **Special precautions for user**	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

14.7. Maritime transport in bulk according to IMO instruments

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

Not Applicable

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

Product name	Group
UDMA	Not Available
3,3,5-trimethylcyclohexyl methacrylate	Not Available
ethylene glycol dimethacrylate	Not Available
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	Not Available
glycerol	Not Available
diphenyl(2,4,6-trimethylbenzoyl)phosphine	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available
diethyl 2,5-dihydroxyterephthalate	Not Available
styrene	Not Available
toluene	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
UDMA	Not Available
3,3,5-trimethylcyclohexyl methacrylate	Not Available
ethylene glycol dimethacrylate	Not Available
3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate	Not Available
glycerol	Not Available
diphenyl(2,4,6-trimethylbenzoyl)phosphine	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available
diethyl 2,5-dihydroxyterephthalate	Not Available
styrene	Not Available
toluene	Not Available

SECTION 15 Regulatory information

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

UDMA is found on the following regulatory lists

Continued...

Not Applicable

3,3,5-trimethylcyclohexyl methacrylate is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

ethylene glycol dimethacrylate is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

glycerol is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

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

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
EU REACH Regulation (EC) No 1907/2006 - Proposals to identify Substances of Very High Concern: Annex XV reports for commenting by Interested Parties previous consultation
Europe EC Inventory
Europe European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
Netherlands SZW List Non-exhaustive list of reproductive toxins (Dutch)

2,6-di-tert-butyl-4-methylphenol is found on the following regulatory lists

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

diethyl 2,5-dihydroxyterephthalate is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

styrene is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans
Netherlands SZW List Non-exhaustive list of reproductive toxins (Dutch)

toluene is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)
EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

Continued...

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

Netherlands Occupational Exposure Limits

Netherlands SZW List Non-exhaustive list of reproductive toxins (Dutch)

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	Not Available

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (UDMA)
Canada - DSL	No (UDMA; 3,3,5-trimethylcyclohexyl methacrylate; diethyl 2,5-dihydroxyterephthalate)
Canada - NDSL	No (UDMA; ethylene glycol dimethacrylate; 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate; glycerol; diphenyl(2,4,6-trimethylbenzoyl)phosphine; styrene; toluene)
China - IECSC	No (UDMA)
Europe - EINEC / ELINCS / NLP	No (UDMA)
Japan - ENCS	No (UDMA; 3,3,5-trimethylcyclohexyl methacrylate; diethyl 2,5-dihydroxyterephthalate)
Korea - KECI	No (UDMA; diethyl 2,5-dihydroxyterephthalate)
New Zealand - NZIoC	No (UDMA; diethyl 2,5-dihydroxyterephthalate)
Philippines - PICCS	No (UDMA; 3,3,5-trimethylcyclohexyl methacrylate; diethyl 2,5-dihydroxyterephthalate)
USA - TSCA	No (UDMA)
Taiwan - TCSI	No (UDMA; diethyl 2,5-dihydroxyterephthalate)
Mexico - INSQ	No (UDMA; 3,3,5-trimethylcyclohexyl methacrylate; diethyl 2,5-dihydroxyterephthalate)
Vietnam - NCI	No (UDMA)
Russia - FBEPH	No (UDMA; 3,3,5-trimethylcyclohexyl methacrylate; diethyl 2,5-dihydroxyterephthalate)
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 Other information

Revision Date	12/04/2024
Initial Date	23/08/2023

Full text Risk and Hazard codes

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.

Continued...

H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SDS Version Summary

Version	Date of Update	Sections Updated
7.1	01/09/2023	Composition / information on ingredients - Ingredients
8.1	12/04/2024	Toxicological information - Chronic Health, Hazards identification - Classification, Composition / information on ingredients - Ingredients

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee 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.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

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 Limit。
- 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- 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

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Continued...

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Skin Corrosion/Irritation Category 2, H315	Minimum classification
Sensitisation (Skin) Category 1, H317	Calculation method
Serious Eye Damage/Eye Irritation Category 2, H319	Minimum classification
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , H335	Minimum classification
, EUH204	Calculation method

Continued...

end of SDS