SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name: LOCTITE 638 RETAIN CMPND 50ML

Intended use: Anaerobic Adhesive

Supplier:

Henkel New Zealand Ltd
2 Allens Rd
East Tamaki
Auckland, 2013
New Zealand
Phone: +64 (9) 272-6710

E-mail address of person responsible for Safety Data Sheet: SDSinfo.Adhesive@henkel.com

Emergency Telephone for Chemical Accidents: 24 HOUR EMERGENCY CONTACT NUMBER 0800 243 622

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classified as hazardous under the New Zealand Hazardous Substances and New Organisms Act (HSNO).
Classified as Dangerous Goods under the Land Transport Rule: Dangerous Goods 2005.

GHS Classification:

Hazard Class	Hazard Category	Target organ
Skin irritation	Category 2	
Serious eye damage/eye irritation	Category 1	
Skin sensitizer	Category 1	
Target Organ Systemic Toxicant - Single exposure	Category 3	respiratory tract irritation
Chronic hazards to the aquatic environment	Category 3	

Hazard pictogram:

Signal word: Danger

Hazard statement(s):
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statement(s):

Prevention:
P261 Avoid breathing mist/vapours.
P264 Wash hands thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves, eye protection, and face protection.

Response:
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P305+P351+P338+P315 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Get immediate medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

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

Disposal:
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

General chemical description: Mixture
Acrylate

Type of preparation: Adhesive

Identity of ingredients:

Chemical ingredients	CAS-No.	Proportion
3,3,5 Trimethylcyclohexyl methacrylate	7779-31-9	10- < 20 %
2-Hydroxyethyl methacrylate	868-77-9	10- < 20 %
Acrylic acid	79-10-7	3- < 5 %
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	1- < 10 %
α, α-dimethylbenzyl hydroperoxide	80-15-9	0.1- < 1 %
maleic acid	110-16-7	0.1- < 1 %
Acetic acid, 2-phenylhydrazide	114-83-0	0.1- < 1 %
2,2'-Ethylenedioxydiethyl dimethacrylate	109-16-0	0.1- < 1 %
methacrylic acid	79-41-4	0.1- < 1 %
Non-hazardous ingredients~		remainder up to 100%

SECTION 4 FIRST AID MEASURES

Ingestion:
Do not induce vomiting.
Have victim rinse mouth thoroughly with water.
Seek medical advice.

Skin:
In case of contact, immediately remove contaminated clothing and flush skin with copious amounts of water.
Seek medical advice.

Eyes:
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get immediate medical attention.

Inhalation:	Move to fresh air. Keep warm and in a quiet place. Seek medical advice.
First Aid facilities:	Eye wash and safety shower Normal washroom facilities
Medical attention and special treatment:	Treat symptomatically and supportively.

SECTION 5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Carbon dioxide, foam, powder
Decomposition products in case of fire:	Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide. Carbon dioxide. Oxides of nitrogen.
Special protective equipment for fire-fighters:	Wear full protective clothing. Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).
Additional fire fighting advice:	In case of fire, keep containers cool with water spray. Collect contaminated fire fighting water separately. It must not enter drains.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Avoid contact with skin and eyes. Wear protective equipment. Ensure adequate ventilation. Remove sources of ignition.
Environmental precautions:	Do not empty into drains / surface water / ground water.
Clean-up methods:	For small spills wipe up with paper towel and place in container for disposal. For large spills absorb onto inert absorbent material and place in sealed container for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:	Use only in well-ventilated areas. Remove all sources of ignition. Avoid skin and eye contact. Wear protective equipment.
Conditions for safe storage:	Ensure good ventilation/extraction. Keep container tightly sealed. Store in a cool, well-ventilated place. Keep away from sources of ignition.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Workplace exposure standards:

Ingredient [Regulated substance]	form of exposure	TWA (ppm)	TWA (mg/m3)	Ceiling	STEL (ppm)	STEL (mg/m3)
ACRYLIC ACID 79-10-7		2	5.9	-	-	-
METHACRYLIC ACID 79-41-4		20	70	-	-	-

Biological Exposure Indices:
None

Engineering controls: Ensure good ventilation/extraction.

Eye protection: Wear chemical goggles and face shield.

Skin protection: Wear suitable protective clothing.
Nitrile rubber gloves should be worn.
Please note that in practice the working life of chemical resistant gloves may be considerably reduced as a result of many influencing factors (e.g. temperature). Suitable risk assessment should be carried out by the end user. If signs of wear and tear are noticed then the gloves should be replaced.

Respiratory protection: If inhalation risk exists, wear a respirator or air supplied mask complying with the requirements of AS/NZS 1715 and AS/NZS 1716.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Green
liquid
Odor: Acrylic
pH: Not applicable, Product is non-polar/aprotic.
Melting point / freezing point: Not applicable, Product is a liquid
Specific gravity: 1.1
Boiling point: > 150 °C (> 302 °F)
Flash point: > 100 °C (> 212 °F)
Evaporation rate: Not available.

Vapor pressure: < 10 mm hg
(; 27 °C (80.6 °F); 20 °C (68 °F)) < 0.13 mbar

Vapor density: > 1

Density: 1.1 g/cm3
Solubility in water: Insoluble
Auto ignition: Not available.
Decomposition temperature:

VOC content: < 3 %
(2010/75/EC)

SECTION 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Conditions to avoid:	Excessive heat. Heat, flames, sparks and other sources of ignition.
Incompatible materials:	Reaction with strong acids. Reacts with strong oxidants.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide. Carbon dioxide. Oxides of nitrogen. Oxides of sulfur.

SECTION 11 TOXICOLOGICAL INFORMATION

Health Effects:

Ingestion:	May cause gastrointestinal tract irritation if swallowed.
Skin:	Irritating to skin. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause skin sensitization.
Eyes:	Causes serious eye damage. Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in corneal injury. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Inhalation:	This product is irritating to the respiratory system. Inhalation of vapor or aerosol may cause severe irritation to nose, throat and lungs.
Skin irritation:	Result: Category 2 (irritant)

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	LD0 LD50 LD0 LD50	> 5,000 mg/kg > 5,000 mg/kg > 2,000 mg/kg > 2,000 mg/kg	oral oral dermal dermal		rat rat rat rat	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
2-Hydroxyethyl methacrylate 868-77-9	LD50 LD50	5,564 mg/kg > 5,000 mg/kg	oral dermal		rat rabbit	FDA Guideline not specified
Acrylic acid 79-10-7	LD50 LC0 Acute toxicity estimate (ATE) Acute toxicity estimate (ATE)	1,500 mg/kg 5.1 mg/l 11 mg/l 1,100 mg/kg	oral inhalation inhalation dermal	 4 h 	rat rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity) Expert judgement Expert judgement
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	LD50 LD50	> 2,000 mg/kg > 5,000 mg/kg	oral dermal		rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) not specified
α, α-dimethylbenzyl hydroperoxide 80-15-9	LD50 LC50 Acute toxicity estimate (ATE)	382 mg/kg 1.370 mg/l 1,100 mg/kg	oral inhalation dermal	 4 h 	rat rat	other guideline: not specified Expert judgement
maleic acid 110-16-7	LD50 LD50	708 mg/kg 1,560 mg/kg	oral dermal		rat rabbit	not specified not specified
Acetic acid, 2-phenylhydrazide 114-83-0	LD50	310 mg/kg	oral		rat	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	LD50 Acute toxicity estimate (ATE) Acute toxicity estimate (ATE)	10,837 mg/kg 28.17 mg/l > 5,000 mg/kg	oral inhalation dermal	 	rat	not specified Expert judgement Expert judgement
methacrylic acid 79-41-4	LD50 LC50 Acute toxicity estimate (ATE) LD50 Acute toxicity estimate (ATE)	1,320 mg/kg 3.19 - 6.5 mg/l 3.19 mg/l 500 - 1,000 mg/kg 500 mg/kg	oral inhalation inhalation dermal dermal	 4 h 	rat rat rabbit	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity) Expert judgement Dermal Toxicity Screening Expert judgement

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2-Hydroxyethyl methacrylate 868-77-9	slightly irritating	24 h	rabbit	Draize Test
Acrylic acid 79-10-7	Sub-Category 1A (corrosive)	3 min	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	not irritating	24 h	rabbit	Draize Test
α, α-dimethylbenzyl hydroperoxide 80-15-9	corrosive		rabbit	Draize Test
maleic acid 110-16-7	irritating	24 h	human	Patch Test
Acetic acid, 2-phenylhydrazide 114-83-0	not corrosive		Human, EpiSkinTM (SM), Reconstructed Human Epidermis (RHE)	OECD Guideline 431 (In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method)
Acetic acid, 2-phenylhydrazide 114-83-0	not irritating		Human, EpiSkinTM (SM), Reconstructed Human Epidermis (RHE)	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	not irritating	24 h	rabbit	Draize Test
methacrylic acid 79-41-4	corrosive	3 min	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2-Hydroxyethyl methacrylate 868-77-9	Category 2B (mildly irritating to eyes)		rabbit	Draize Test
Acrylic acid 79-10-7	Category 1 (irreversible effects on the eye)		rabbit	BASF Test
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Category 2B (mildly irritating to eyes)		rabbit	Draize Test
maleic acid 110-16-7	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Acetic acid, 2-phenylhydrazide 114-83-0	not irritating		Chicken, eye, isolated	OECD Guideline 438 (Isolated Chicken Eye Test Method)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
methacrylic acid 79-41-4	corrosive		rabbit	Draize Test

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2-Hydroxyethyl methacrylate 868-77-9	not sensitising	Buehler test	guinea pig	Buehler test
2-Hydroxyethyl methacrylate 868-77-9	sensitising	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method
Acrylic acid 79-10-7	not sensitising	Freund's complete adjuvant test	guinea pig	Klecak Method
Acrylic acid 79-10-7	not sensitising	Split adjuvant test	guinea pig	Maguire Method
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	sensitising	Guinea pig maximisation test	guinea pig	not specified
maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Acetic acid, 2-phenylhydrazide 114-83-0	positive	Direct peptide reactivity assay (DPRA)	cysteine and lysine, in chemico test	OECD Guideline 442C (Direct Peptide Reactivity Assay (DPRA))
Acetic acid, 2-phenylhydrazide 114-83-0	positive	Activation of keratinocytes	human keratinocytes, in vitro test	OECD Guideline 442D (ARE-Nrf2 Luciferase Test Method)
Acetic acid, 2-phenylhydrazide 114-83-0	positive	activation of dendritic cells	human monocytes, in vitro test	OECD Guideline 442E (H-CLAT: Human Cell Line Activation Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
methacrylic acid 79-41-4	not sensitising	Buehler test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2-Hydroxyethyl methacrylate 868-77-9	negative positive negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test mammalian cell gene mutation assay	with and without with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2-Hydroxyethyl methacrylate 868-77-9	negative negative	oral: gavage oral: gavage		rat Drosophila melanogaster	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) not specified
Acrylic acid 79-10-7	negative negative negative	bacterial reverse mutation assay (e.g Ames test) mammalian cell gene mutation assay DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	with and without with and without without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) equivalent or similar to OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells
Acrylic acid 79-10-7	negative negative	oral: gavage oral: gavage		rat mouse	equivalent or similar to OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test) not specified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	negative positive negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test mammalian cell gene mutation assay	with and without with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) Chromosome Aberration Test OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	negative negative	oral: gavage oral: gavage		mouse Drosophila melanogaster	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) not specified
α, α-dimethylbenzyl hydroperoxide 80-15-9	positive	bacterial reverse mutation assay (e.g Ames test)	without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
α, α-dimethylbenzyl hydroperoxide 80-15-9	negative	dermal		mouse	not specified
maleic acid 110-16-7	negative negative	bacterial reverse mutation assay (e.g Ames test) mammalian cell gene mutation assay	no data with and without		Ames Test OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Acetic acid, 2-phenylhydrazide 114-83-0	positive negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian cell micronucleus test	with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	negative negative negative	mammalian cell gene mutation assay bacterial reverse mutation assay (e.g Ames test)	with and without with and without with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) OECD Guideline 471 (Bacterial Reverse Mutation

		in vitro mammalian cell micronucleus test			Assay) OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
methacrylic acid 79-41-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
methacrylic acid 79-41-4	negative negative	inhalation oral: gavage		mouse mouse	equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test) equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Repeated dose toxicity:

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	NOAEL=1,000 mg/kg	oral: gavage	28 ddaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
2-Hydroxyethyl methacrylate 868-77-9	NOAEL=100 mg/kg	oral: gavage	49 ddaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
2-Hydroxyethyl methacrylate 868-77-9	NOAEL=0.352 mg/l	inhalation	90 d6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Acrylic acid 79-10-7	NOAEL=40 mg/kg	oral: drinking water	12 mdaily	rat	equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies)
Acrylic acid 79-10-7	NOAEL=0.015 mg/l	inhalation: vapour	90 d6 h/d, 5 d/w	mouse	equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	NOAEL=300 mg/kg	oral: gavage	49 ddaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	NOAEL=0.352 mg/l	inhalation	90 d6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
α, α-dimethylbenzyl hydroperoxide 80-15-9		inhalation: aerosol	6 h/d5 d/w	rat	not specified
maleic acid 110-16-7	NOAEL=>= 40 mg/kg	oral: feed	90 ddaily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	NOAEL=1,000 mg/kg	oral: gavage	daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
methacrylic acid 79-41-4		inhalation	90 d6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)

SECTION 12. ECOLOGICAL INFORMATION

General ecological information: Do not empty into drains / surface water / ground water.

Ecotoxicity:

H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	LC50	1.9 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	EC50	14.43 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	EC10	0.43 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-Hydroxyethyl methacrylate 868-77-9	LC50	> 100 mg/l	Fish	96 h	Oryzias latipes	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-Hydroxyethyl methacrylate 868-77-9	EC50	380 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-Hydroxyethyl methacrylate 868-77-9	EC50	836 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-Hydroxyethyl methacrylate 868-77-9	NOEC	400 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-Hydroxyethyl methacrylate 868-77-9	EC0	> 3,000 mg/l	Bacteria	16 h	Pseudomonas fluorescens	other guideline:
Acrylic acid 79-10-7	LC50	27 mg/l	Fish	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	EPA OTS 797.1400 (Fish Acute Toxicity Test)
Acrylic acid 79-10-7	NOEC	>= 10.1 mg/l	Fish	45 d	Oryzias latipes	OECD Guideline 210 (fish early lite stage toxicity test)
Acrylic acid 79-10-7	EC50	95 mg/l	Daphnia	48 h	Daphnia magna	EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
Acrylic acid 79-10-7	EC10	0.03 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	EU Method C.3 (Algal Inhibition test)
Acrylic acid 79-10-7	EC50	0.13 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	EU Method C.3 (Algal Inhibition test)
Acrylic acid 79-10-7	EC20	900 mg/l	Bacteria	30 min	activated sludge, domestic	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	LC50	493 mg/l	Fish	48 h	Leuciscus idus melanotus	DIN 38412-15
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	EC50	> 143 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	EC50	> 97.2 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	NOEC	> 97.2 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methacrylic acid, monoester	EC10	1,140 mg/l	Bacteria	16 h		not specified

with propane-1,2-diol 27813-02-1						
α, α-dimethylbenzyl hydroperoxide 80-15-9	LC50	3.9 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
α, α-dimethylbenzyl hydroperoxide 80-15-9	EC50	18.84 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
α, α-dimethylbenzyl hydroperoxide 80-15-9	EC50	3.1 mg/l	Algae	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
α, α-dimethylbenzyl hydroperoxide 80-15-9	NOEC	1 mg/l	Algae	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
α, α-dimethylbenzyl hydroperoxide 80-15-9	EC10	70 mg/l	Bacteria	30 min	not specified	not specified
maleic acid 110-16-7	LC50	> 245 mg/l	Fish	48 h	Leuciscus idus	DIN 38412-15
maleic acid 110-16-7	EC50	42.81 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
maleic acid 110-16-7	EC50	74.35 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC10	11.8 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC10	44.6 mg/l	Bacteria	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Acetic acid, 2-phenylhydrazide 114-83-0	EC50	1.1 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Acetic acid, 2-phenylhydrazide 114-83-0	EC50	0.258 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Acetic acid, 2-phenylhydrazide 114-83-0	NOEC	0.012 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	LC50	16.4 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	EC50	> 100 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	NOEC	18.6 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
methacrylic acid 79-41-4	LC50	85 mg/l	Fish	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	EPA OTS 797.1400 (Fish Acute Toxicity Test)
methacrylic acid 79-41-4	NOEC	10 mg/l	Fish	35 d	Danio rerio	OECD Guideline 210 (fish early lite stage toxicity test)
methacrylic acid 79-41-4	EC50	> 130 mg/l	Daphnia	48 h	Daphnia magna	EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
methacrylic acid 79-41-4	NOEC	8.2 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
methacrylic acid 79-41-4	EC50	45 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

methacrylic acid 79-41-4	EC10	100 mg/l	Bacteria	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	not readily biodegradable.	aerobic	16.8 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
2-Hydroxyethyl methacrylate 868-77-9	readily biodegradable	aerobic	92 - 100 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Acrylic acid 79-10-7	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
Acrylic acid 79-10-7	readily biodegradable	aerobic	81 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	readily biodegradable	aerobic	94.2 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
α, α-dimethylbenzyl hydroperoxide 80-15-9	not readily biodegradable.	aerobic	3 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
maleic acid 110-16-7	readily biodegradable	aerobic	97.08 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Acetic acid, 2-phenylhydrazide 114-83-0	not readily biodegradable.	aerobic	39 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	readily biodegradable	aerobic	85 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
methacrylic acid 79-41-4	readily biodegradable	aerobic	86 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
methacrylic acid 79-41-4	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method

3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	5.25				20 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
2-Hydroxyethyl methacrylate 868-77-9	0.42				25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Acrylic acid 79-10-7		3.16				QSAR (Quantitative Structure Activity Relationship)
Acrylic acid 79-10-7	0.46				25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	0.97				20 °C	not specified
α, α-dimethylbenzyl hydroperoxide 80-15-9		9.1		calculation		OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
α, α-dimethylbenzyl hydroperoxide 80-15-9	1.6				25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
maleic acid 110-16-7	-1.3				20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Acetic acid, 2-phenylhydrazide 114-83-0	0.74					QSAR (Quantitative Structure Activity Relationship)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	2.3					OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
methacrylic acid 79-41-4	0.93				22 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal of product: Collection and delivery to recycling enterprise or other registered elimination institution. Dispose of according to Federal, State and local governmental regulations.

Disposal for uncleaned package: After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

SECTION 14. TRANSPORT INFORMATION

Dangerous Goods information:

Land Transport:
Classified as Dangerous Goods under the Land Transport Rule: Dangerous Goods 2005.

Marine transport IMDG:
Not dangerous goods

Air transport IATA:
Not dangerous goods

SECTION 15. REGULATORY INFORMATION

New Zealand regulatory information:
Classified as hazardous under the New Zealand Hazardous Substances and New Organisms Act (HSNO).

HSNO Approval Number: HSR002670

NZIoC: Compliant for NZIoC

SECTION 16. OTHER INFORMATION

Abbreviations/acronyms:
CAS: Chemical Abstracts Service
GHS: Globally Harmonized System
HSNO: Hazardous Substances and New Organisms
IATA : International Air Transport Association – Dangerous Goods Regulations
IMDG: International Maritime Dangerous Goods code
LC 50: Lethal Concentration 50%
LD 50: Lethal Dose 50%
STEL - Short term exposure limit
TWA - Time weighted average

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