GI-MASK Activator

Coltène/Whaledent AG

Version No: **3.4**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

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SECTION 1 Identification

Product Identifier

Product name	GI-MASK Activator
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	UFI:N300-P0FG-K005-G0WG

Recommended use of the chemical and restrictions on use

Relevant identified uses	For dental use only Use according to manufacturer's directions.

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

Registered company name	**Coltène/Whaledent AG**
Address	Feldwiesenstrasse 20 Altstätten CH-9450 Switzerland
Telephone	+41 (71) 75 75 300
Fax	+41 (71) 75 75 301
Website	www.coltene.com
Email	msds@coltene.com

Emergency phone number

Association / Organisation	**CHEMWATCH EMERGENCY RESPONSE (24/7)**
Emergency telephone numbers	+1 855-237-5573
Other emergency telephone numbers	+61 3 9573 3188

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

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

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond

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

Classification	Flammable Liquids Category 3, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Acute Toxicity (Inhalation) Category 4, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Skin Corrosion/Irritation Category 2,

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	Hazardous to the Aquatic Environment Long-Term Hazard Category 4, Gases Under Pressure

Label elements

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

Hazard statement(s)

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H315	Causes skin irritation.
H413	May cause long lasting harmful effects to aquatic life.
H280	Contains gas under pressure; may explode if heated.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P260	Do not breathe mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P270	Do not eat, drink or smoke when using this product.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P264	Wash all exposed external body areas thoroughly after handling.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statement(s) Response

P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed: Call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

Continued...

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

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

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
93925-43-0	20-35	tetraethyl silicate/ dioctyltin diacetate reaction products
68299-15-0	1-10	dioctyltin dinonanoate

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: • Wash out immediately with fresh running water. • Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. • 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.
Ingestion	• Immediately give a glass of water. • First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

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For acute or short term repeated exposures to organic tin compounds:

- Severe exposure results in tinnitus, deafness, memory loss, psychosis, coma, disorientation and respiratory depression after a latent period of 1-3 days.
- Permanent neurologic sequelae include extrapyramidal hyperkinesia.
- The material produces erythematous skin lesions.
- Management is primarily supportive.
- British Anti-Lewisite and d-penacillamine are not effective as chelators. [Ellenhorn and Barceloux: Medical Toxicology]

Treat symptomatically.
Scanty animal data indicate that BAL may be useful against dialkyl but not trialkyl organotin compounds. D-penicillamine is thought to be inactive.
GOSSELIN, SMITH & HODGE: Clinical Toxicology of Commercial Products, 5th Ed
Dimercaprol is suggested to be an effective antidote for dialkyltin poisoning and has been reported to prevent the accumulation of alpha-keto acids produced by dialkyltin compounds. It does not however appear to protect rats from the general toxic effects of triethyltin compounds. This may be due to the fact that dialkyltin compounds, at least up to dihexyl derivatives, react readily with sulfhydryl groups and trialkyltin compounds do not.
Surgical decompression was considered to be the only treatment that offered any benefit in human cases of cerebral oedema caused by trialkyl compounds.
Tin and Organotin Compounds: A Preliminary Review.
ENVIRONMENTAL HEALTH CRITERIA: World Health Organization Geneva 1980.

SECTION 5 Fire-fighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

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

Special protective equipment and precautions for fire-fighters

Fire Fighting	‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear full body protective clothing with breathing apparatus. ‣ Prevent, by any means available, spillage from entering drains or water course. ‣ Use water delivered as a fine spray to control fire and cool adjacent area. ‣ Avoid spraying water onto liquid pools. ‣ **DO NOT** approach containers suspected to be hot. ‣ Cool fire exposed containers with water spray from a protected location. ‣ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	‣ 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) , silicon dioxide (SiO_2) , other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Continued...

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 small quantities with vermiculite or other absorbent material. ▸ Wipe up. ▸ Collect residues in a flammable waste container.
Major Spills	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.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ 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. ▸ Avoid contact with incompatible materials. ▸ 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. Launder contaminated clothing before re-use. ▸ 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 are maintained.
Other information	▸ 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.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▸ Segregate from alcohol, water. ▸ Avoid strong acids, bases. ▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	tetraethyl silicate/ dioctyltin diacetate	Tin (organic compounds, as	0.1 mg/m3	Not Available	Not Available	[skin] [*Note: The REL applies to all organic tin compounds except

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
	reaction products	Sn)				Cyhexatin.]
US OSHA Permissible Exposure Limits (PELs) Table Z-1	dioctyltin dinonanoate	Tin, organic compounds (as Sn)	0.1 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	dioctyltin dinonanoate	Tin (organic compounds, as Sn)	0.1 mg/m3	Not Available	Not Available	[skin] [*Note: The REL applies to all organic tin compounds except Cyhexatin.]

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
GI-MASK Activator	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
tetraethyl silicate/ dioctyltin diacetate reaction products	Not Available	Not Available
dioctyltin dinonanoate	25 mg/m3	Not Available

MATERIAL DATA

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

The no/lowest-observed-adverse-effect levels (NOAELs or LOAELs) in inhalation studies involving tri-n-butyltin chloride and bromide are 0.3-0.4 ppm (2-4 mg/m3) based on changes in the lungs, heart, liver, kidneys, nervous system and reproductive system in rodents. Oral administration of organotin compounds has induced toxicity in a number of differing organ systems, organs and lungs. The LOAEL for triethyltin bromide was 0.4 mg triethyltin/kg/day as 5 ppm in drinking water. The LOAELs for the most critical organ sites in rats (i.e. the cellular immune response and CNS effects) are 0.15 and 0.23 mg/tin/kg body weight/day. Experience with ingested tri- and diethyltins in the treatment of staphylococcal infections, osteomyelitis, anthrax and acne suggests that humans react in a manner similar to rodents, but that the human is more sensitive to absorbed organic tin. The recommended TLV-TWA is thought to minimise the potential for adverse effects on immune function and the central nervous system. A STEL is also recommended to minimise acute symptoms such as eye and respiratory tract irritation, headaches and/or nausea. Based on an exposure to 0.1 mg/m3, a 70-kg worker breathing 10 m3 of air/8hr workday and assuming complete retention of the inhaled dose, would receive a daily exposure of 14.3 ug tin/kg body weight of an organotin compound. A skin notation was recommended based on animal data and the potential danger of enhanced absorption due to damaged skin present in many exposed workers.

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
Provide adequate ventilation in warehouse or closed storage area. 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:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
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.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

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	<table><tr><td>Lower end of the range</td><td>Upper end of the range</td></tr><tr><td>1: Room air currents minimal or favourable to capture</td><td>1: Disturbing room air currents</td></tr><tr><td>2: Contaminants of low toxicity or of nuisance value only.</td><td>2: Contaminants of high toxicity</td></tr><tr><td>3: Intermittent, low production.</td><td>3: High production, heavy use</td></tr><tr><td>4: Large hood or large air mass in motion</td><td>4: Small hood-local control only</td></tr></table> Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Safety glasses with side shields. ‣ Chemical goggles. ‣ 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], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	‣ Wear chemical protective gloves, e.g. PVC. ‣ Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below

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Other protection	‣ Overalls. ‣ P.V.C apron. ‣ Barrier cream. ‣ Skin cleansing cream. ‣ Eye wash unit.

Respiratory protection

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

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

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

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

- 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

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Colourless

Physical state	Liquid	**Relative density (Water = 1)**	1.0
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 Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	>150	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**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	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	‣ Unstable in the presence of incompatible materials. ‣ Product is considered stable. ‣ Hazardous polymerisation will not occur.

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Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
Ingestion	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum. The systematic effects of mono-, di-, and tri-substituted organotin compounds vary markedly with tri- and tetra-substituted species generally the most toxic. Because of their low water-solubility many are poorly absorbed from the alimentary tract. Repeated administration of very small doses over a few days however reveals the high intrinsic toxicities of this class of compound. Toxicity is largely dependent on the nature of the organic moiety with only a small contribution from the inorganic ion. Subchronic exposures may elicit toxic response in the central nervous, immune and renal systems, the liver and bile duct and the skin.
Skin Contact	The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives . Irritation following contact with organotin compounds may be delayed, in certain cases chemical burns and dermatitis may result. Rate of absorption may be increased if product is in solution. Open cuts, abraded or irritated skin should not be exposed to this material
Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. Organotin compounds may be strong irritants, and acute conjunctivitis may result from eye splashes, even when followed by immediate lavage; corneal opacities have also been observed.
Chronic	Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Both tributyltins (TBT) and dibutyltins (DBT) have negative effects on the reproductive system in mammals. In line with these facts, TBT and TPT were given the highest category in a European review of endocrine disrupting chemicals (BKH, 2000): “Evidence for endocrine disruption in living organisms”. TBT was also classified as “Evidence of potential to cause endocrine disruption in humans”. Organotins are also toxic by other mechanisms. For instance, several organotins are strongly immunosuppressive, display developmental and reproductive effects and are neurotoxic TPT is classified as category 3 carcinogenic in the EU, but as category 2 (probable human carcinogenic) by the USEPA (EFSA, 2004). DBT may actually be more toxic than TBT to certain enzyme systems. Immunotoxic and developmental effects in mammals may also be more sensitive to DBT than to TB. Both TBT and TPT may be classified as Persistent, Bioaccumulative and Toxic (PBT) and very Persistent,very Bioaccumulative (vPvB) substances according to certain, whereas DBT and dioctyl tin (DO)T may be classified as PBT For human health, there are no epidemiological studies on chronic low level exposure available It has been suggested that toxicity was equal for DBT, TBT, DOT and TPT for humans, and proposed a group TDI of 0.1 ìg Sn (kg Bw and d)-1

GI-MASK Activator	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
tetraethyl silicate/ dioctyltin diacetate reaction products	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye : Severe *
	Oral (Rat) LD50: 1000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]

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		Skin: no adverse effect observed (not irritating)[1]
dioctyltin dinonanoate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >=2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: >2000 mg/kg[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*	

TETRAETHYL SILICATE/ DIOCTYLTIN DIACETATE REACTION PRODUCTS	Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)dibutylstannane (CAS 93925-42-9; EC EC number: 300-344-4) is analogue substance. REACh Dossier Classification (R10,R20/22,R41,R48/25,R60 (Cat 2),R61 (Cat 2),R68,R52/53: H332,H226,H302,H341,H360,H370,H372,H412, is significantly different to that given for this substance (silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane). The substance is highly irrirating to the eye due of agglutination. The skin sensitisation potential of the test material was determined in accordance with the standardised guidelines OECD 429 and EU Method B.42 using the mouse Local Lymph Node Assay. The test material was applied as a 5 %, 10 % or 25 % w/w preparation in propylene glycol. The positive control was shown to have the capacity to cause skin sensitisation confirming the validity of the protocol used for this study. The isotope concentration induced by the test material was less than three-fold at all test concentrations and therefore the test material is considered to be unlikely to be a skin sensitiser. The mutagenicity of the test substance was assessed in a bacterial reverse mutation assay (Ames Test) in accordance with the OECD guideline 471 and EPA OPPTS 870.5100 and to GLP. The cultures were exposed to 0, 62, 185, 556, 1667 and 5000 µg/plate. Precipitation of the test substance was observed at a number of the concentrations tested. In some of the plates a slight dose-dependant increase in the number of revertants were noticed, however this was accompanied by an increased background lawn and precipitation. This was therefore not attributed to the mutagenic potential of the test substance. Under the conditions of the test, the results obtained with the test substance in Salmonella typhimurium strains TA 1535, TA 1537, TA 98 and TA 100 and in the Escherichia coli strain WP2 uvrA, in both the absence and presence of metabolic activation (S9-mix), the test substance was not mutagenic. *REACh Dossier
DIOCTYLTIN DINONANOATE	For aliphatic fatty acids (and salts) Acute oral (gavage) toxicity: The acute oral LD50 values in rats for both were greater than >2000 mg/kg bw Clinical signs were generally associated with poor condition following administration of high doses (salivation, diarrhoea, staining, piloerection and lethargy).There were no adverse effects on body weight in any study In some studies, excess test substance and/or irritation in the gastrointestinal tract was observed at necropsy. Skin and eye irritation potential, with a few stated exceptions, is chain length dependent and decreases with increasing chain length According to several OECD test regimes the animal skin irritation studies indicate that the C6-10 aliphatic acids are severely irritating or corrosive, while the C12 aliphatic acid is irritating, and the C14-22 aliphatic acids generally are not irritating or mildly irritating. Human skin irritation studies using more realistic exposures (30-minute,1-hour or 24-hours) indicate that the aliphatic acids have sufficient, good or very good skin compatibility. Animal eye irritation studies indicate that among the aliphatic acids, the C8-12 aliphatic acids are irritating to the eye while the C14-22 aliphatic acids are not irritating. Eye irritation potential of the ammonium salts does not follow chain length dependence; the C18 ammonium salts are corrosive to the eyes. Dermal absorption: The in vitro penetration of C10, C12, C14, C16 and C18 fatty acids (as sodium salt solutions) through rat skin decreases with increasing chain length. At 86.73 ug C16/cm2 and 91.84 ug C18/cm2, about 0.23% and less than 0.1% of the C16 and C18 soap solutions is absorbed after 24 h exposure, respectively. Sensitisation: No sensitisation data were located. Repeat dose toxicity: Repeated dose oral (gavage or diet) exposure to aliphatic acids did not result in systemic toxicity with NOAELs greater than the limit dose of 1000 mg/kg bw. . Mutagenicity Aliphatic acids do not appear to be mutagenic or clastogenic in vitro or in vivo Carcinogenicity No data were located for carcinogenicity of aliphatic fatty acids. Reproductive toxicity No effects on fertility or on reproductive organs, or developmental effects were observed in studies on aliphatic acids and the NOAELs correspond to the maximum dose tested. The weight of evidence supports the lack of reproductive and developmental toxicity potential of the aliphatic acids category. Given the large number of substances in this category, their closely related chemical structure, expected trends in physical chemical properties, and similarity of toxicokinetic properties, both mammalian and aquatic endpoints were filled using read-across to the closest structural analogue, and selecting the most conservative supporting substance effect level. Structure-activity relationships are not evident for the mammalian toxicity endpoints.That is, the low mammalian toxicity of this category of substances limits the ability to discern structural effects on biological activity. Regardless, the closest structural analogue with the most conservative effect value was selected for read across. Irritation is observed for chain lengths up to a cut-off" at or near 12 carbons). Metabolism:

Continued...

	The aliphatic acids share a common degradation pathway in which they are metabolized to acetyl-CoA or other key metabolites in all living systems. Common biological pathways result in structurally similar breakdown products, and are, together with the physico-chemical properties, responsible for similar environmental behavior and essentially identical hazard profiles with regard to human health. Differences in metabolism or biodegradability of even and odd numbered carbon chain compounds or saturated/ unsaturated compounds are not expected; even-and odd-numbered carbon chain compounds, and the saturated and unsaturated compounds are naturally occurring and are expected to be metabolized and biodegraded in the same manner. The acid and alkali salt forms of the homologous aliphatic acid are expected to have many similar physicochemical and toxicological properties when they become bioavailable; therefore,data read across is used for those instances where data are available for the acid form but not the salt, and vice versa. In the gastrointestinal tract, acids and bases are absorbed in the undissociated (non-ionised) form by simple diffusion or by facilitated diffusion. It is expected that both the acids and the salts will be present in (or converted to) the acid form in the stomach. This means that for both aliphatic acid or aliphatic acid salt,the same compounds eventually enter the small intestine, where equilibrium, as a result of increased pH, will shift towards dissociation (ionised form). Hence, the situation will be similar for compounds originating from acids and therefore no differences in uptake are anticipated Note that the saturation or unsaturation level is not a factor in the toxicity of these substances and is not a critical component of the read across process.. Toxicokinetics: The turnover of the [14C] surfactants in the rat showed that there was no significant difference in the rate or route of excretion of 14C given by intraperitoneal or subcutaneous administration. The main route of excretion was as 14CO2 in the expired air at 6 h after administration. The remaining material was incorporated in the body. Longer fatty acid chains are more readily incorporated than shorter chains. At ca. 1.55 and 1.64 mg/kg bw, 71% of the C16:0 and 56% of the C18:0 was incorporated and 21% and 38% was excreted as 14CO2, respectively. Glycidyl fatty acid esters (GEs), one of the main contaminants in processed oils, are mainly formed during the deodorisation step in the refining process of edible oils and therefore occur in almost all refined edible oils. GEs are potential carcinogens, due to the fact that they readily hydrolyze into the free form glycidol in the gastrointestinal tract, which has been found to induce tumours in various rat tissues. Therefore, significant effort has been devoted to inhibit and eliminate the formation of GEs GEs contain a common terminal epoxide group but exhibit different fatty acid compositions. This class of compounds has been reported in edible oils after overestimation of 3-monochloropropane-1,2-diol (3-MCPD) fatty acid esters analysed by an indirect method , 3-MCPD esters have been studied as food processing contaminants and are found in various food types and food ingredients, particularly in refined edible oils. 3-Monochloropropane-1,2-diol (3-MCPD) and 2-monochloropropane-1,3-diol (2-MCPD) are chlorinated derivatives of glycerol (1,2,3-propanetriol). 3- and 2-MCPD and their fatty acid esters are among non-volatile chloropropanols, Glycidol is associated with the formation and decomposition of 3- and 2-MCPD. It forms monoesters with fatty acids (GE) during the refining of vegetable oils. Chloropropanols are formed in HVP during the hydrochloric acid-mediated hydrolysis step of the manufacturing process. In food production, chloropropanols form from the reaction of endogenous or added chloride with glycerol or acylglycerol. Although harmful effects on humans and animals have not been demonstrated, the corresponding hydrolysates, 3-MCPD and glycidol, have been identified as rodent genotoxic carcinogens, ultimately resulting in the formation of kidney tumours (3-MCPD) and tumours at other tissue sites (glycidol). Therefore, 3-MCPD and glycidol have been categorised as ‘‘possible human carcinogens (group 2B) and “probably carcinogenic to humans (group 2A), respectively, by the International Agency for Research on Cancer (IARC). Diacylglyceride (DAG) based oils produced by one company were banned from the global market due to “high levels” of GEs. Several reports have also suggested that a bidirectional transformation process may occur not only between glycidol and 3-MCPD but also their esterified forms in the presence of chloride ions. The transformation rate of glycidol to 3-MCPD was higher than that of 3-MCPD to glycidol under acidic conditions in the presence of chloride ion. Precursors of GEs in refined oils have been identified as partial acylglycerols, that is, DAGs and monoacylglycerides (MAGs); however, whether they also originate from triacylglycerides (TAGs) is still a topic of controversial debates. Several authors noted that pure TAGs were stable during heat treatment (such as 235 deg C) for 3 h and were therefore not involved in the formation of GEs. However, experimental results have shown that small amounts of GEs are present in a heat-treated oil model consisting of almost 100% TAGs. The formation of GEs from TAGs can be attributed to the pyrolysis of TAGs to DAGs and MAGs. In contrast, 3-MCPD esters in refined oils can be obtained from TAG . Presently, the mechanism for the formation of GE intermediates and the relationship between GEs and 3-MCPD esters are still unknown. No significant acute toxicological data identified in literature search.
GI-MASK Activator & DIOCTYLTIN DINONANOATE	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.

Acute Toxicity	✔	**Carcinogenicity**	✘
Skin Irritation/Corrosion	✔	**Reproductivity**	✘
Serious Eye Damage/Irritation	✔	**STOT - Single Exposure**	✔

Continued...

Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✓
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

GI-MASK Activator

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

tetraethyl silicate/ dioctyltin diacetate reaction products

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	96h	Fish	>0.09mg/l	2
EC50	72h	Algae or other aquatic plants	>22mg/l	2
EC50	48h	Crustacea	>0.21mg/l	2
LC50	96h	Fish	>0.09mg/l	2

dioctyltin dinonanoate

Endpoint	Test Duration (hr)	Species	Value	Source
EC10(ECx)	72h	Algae or other aquatic plants	>0.0144mg/l	2
LC50	96h	Fish	>5.8mg/l	2
EC50	72h	Algae or other aquatic plants	0.17mg/l	2
EC50	96h	Algae or other aquatic plants	89mg/l	2
EC50	48h	Crustacea	0.17mg/l	2

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*

May cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
Organotin compounds are characterized by a Sn4+ ion to which one to four organic ligands are attached. They are classified according to the type of organic ligand and the most common are butyltins, octyltins and phenyltins.
A large number of organtin substances are used in the society, and some of these are well-known environmental pollutants. The butyltins comprise on such group.
Eco toxicity increases dramatically in the order methylbutyltin (MBT, RSn) < dibutyltin (DBT, R2Sn) < tributyltin (TBT, R3Sn) for certain endpoints.
Degradation of organotin compounds involves the breaking of the tin-carbon bond, which may occur by UV irradiation, or by biological or chemical cleavage. In water, for example, tributyltin can be degraded by photochemical and biological processes relatively rapidly; however, adsorption onto suspended particulate material in water followed by sedimentation is a key removal process. The adsorption behavior of Sn4+ ion and eight organotin species (tri-, di-, and monobutyltin; tri-, di-, and monomethyltin; and tri- and diphenyltin) were studied in a water-sediment system using artificial seawater and estuarine sediment.
Adsorption coefficients varied from 100.5 to 104.5 and showed the trend of Sn4+ > mono > di > tri in the same substituent series. Larger absorption coefficients were found for aromatic compounds than for aliphatic compounds. Releases of organotin compounds to air from various surfaces are, in general, not significant due to their low vapor pressures and rapid photodegradation at surfaces.
The speciation of organotin compounds is pH-dependent. At lower pHs, the cationic form will be the primary form, and as the pH is increased, the neutral hydroxide compounds will be the predominant species. In the environmentally relevant pH range (pH 5–9), the predominant organotin species will be the neutral hydroxide compounds (i.e., R3SnOH, R2Sn(OH)2, and RSn(OH)3). High concentrations of chloride favor the formation of chloro species. The pKa values for trimethyltin, triethyltin, tributyltin, and triphenyltin cations are approximately 6.60, 6.81, 6.25, and 5.2, respectively. Degradation of organotin compounds in sediments is much slower than in water, and half-lives have been estimated to be several years. In addition to dealkylation of organotin compounds, methylation of tin and organotin compounds by chemical and/or biological means may occur. The contribution of methylation by biotic and abiotic mechanisms is not clear. This pathway may result in fully substituted and volatile tin compounds.
At ambient temperatures, the solubilities of organotin compounds range from 0.0001 to about 50 mg/L. Organotin compounds may partition from water to aquatic organisms. The bioavailability of organotin compounds via the food chain appears to be of minor importance for tributyltin and triphenyltin when compared to uptake via the water phase. Seven-day BCF values were derived for dibutyltin dichloride, dibutyltin dilaurate, tributyltin chloride, bis(tributyltin) oxide, and triphenyltin chloride for muscle, liver, kidney, and vertebra tissue of round crucian carp. The BCF values ranged from 12 in muscle to 5,012 in liver. For all organotin compounds, liver had the highest BCF values. The highest BCFs were found for the tributyltin compounds.
The use of tributyltin (TBT) in antifouling paints on ships has caused significant harm to the marine environment worldwide. Female molluscs are masculinized by TBT at levels as low as ca 1 ng/l, and this effect has severe consequences for their ability to reproduce.
Most investigations on the environmental occurrence of organotin substances have focused on TBT. However, other substances such as dibutyltin (DBT), dioctyltin and monobutyltin (MBT) are used in the society for other reasons and are found in other applications.
Most industrial organotin chemicals (OTCs) are composed of an organotin cation and one or several ligands, and most of these chemicals are reconverted to the organotin cation compounds in natural waters. The cation may form dissolved complexes with e.g. chloride in seawater.

Continued...

Therefore, their environmental partitioning properties such as Kd and Kh depend in part on the balancing anion in the environment. Hydrophobicity increases with increasing number of alkyl groups, and with increasing length of the alkyl chain. Organotins are moderately hydrophobic and associate strongly to particles in natural waters. In harbour sediments, log Kd in the range 3-4.3 have been measured for various OTCs, and the particle affinity increased in the order MBT < DBT < TBT. In various soils, however, the reverse pattern of Kd was observed . In organic soils, log Kd exceeded 4.0, whereas adsorption was less strong in mineral soils. In contrast to hydrophobic pollutants such as PCBs or PAHs (that partition to lipids in organic matter), OTCs are adsorbed to the functional groups of organic matter, e.g. phenolic and carboxylic groups.
Because organotins are generally cations, long-range atmospheric transport has generally not been considered as important. It has though been demonstrated that TBT forms highly volatile chloride species in seawater One study has actually demonstrated the presence of organotins in air from rural sites, showing that long-range atmospheric transport of butyltins and octyltins do occur. MBT was the major species in precipitation and deposition. TBT mainly occurred in the gas phase and it is speculated that the source of butyltins may have been volatile TBT species. Subsequent dealkylation in the atmosphere may convert TBT to DBT and MBT.
Organotins are progressively dealkylated in nature, for instance:
TBT-> DBT -> MBT->. Sn4+
Dealkylation proceeds both by photolysis and through enzymatical reactions. This is important to consider when monitoring data are evaluated, since the occurrence of, e.g., DBT may be due to direct release of DBT or to release of TBT that is subsequently dealkylated. Half-lives in soils and sediments are commonly one or a few years, but may be longer under reducing conditions, whereas half-lives in natural waters may range from a few days to several weeks.
Organotin compounds have been detected in various marine organisms, from invertebrates to mammals. In fish and marine mammals, TBT and TPT bioaccumulate more strongly in liver than in muscle. Bioaccumulation is often stronger in bivalves than in fish, a consequence of lower metabolic capacity in bivalves Trisubstituted OTCs are more strongly bioaccumulated than the less lipophilic disubstituted OTCs. Because TBT is dealkylated in many organisms, DBT may be a major species in biota but not necessarily the organotin species that was assimilated. Most studies do not suggest that TBT is biomagnified in aquatic food-chain. However, TPT appears to be biomagnified fairly strongly in the aquatic food chain The trisubstituted substances, TPT and in particular TBT, are widely held as the most toxic organotin substances. Numerous field studies have demonstrated a direct link between TBT and imposex in certain marine organisms, mainly molluscs. Imposex means that females are masculinized and this effect is severe because it directly influences the ability for organisms to reproduce. Imposex has been demonstrated in many coastal areas. These effects occur at very low levels (ca 1 ng/l) for certain organisms. It has been shown in laboratory that TBT causes masculinization also in fish. DBT and MBT does not cause imposex, but both TBT and DBT have negative effects on the reproductive system in mammals. In line with these facts, TBT and TPT were given the highest category in a European review of endocrine disrupting chemicals: “Evidence for endocrine disruption in living organisms”. TBT was also classified as “Evidence of potential to cause endocrine disruption in humans”.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Dispose of waste according to applicable legislation. Special country-specific regulations may apply. Can be disposed together with household waste in compliance with official regulations in contact with approved waste disposal companies and with authorities in charge. (Only dispose of completely emptied packages.) ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

Continued...

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

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

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

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

Not Applicable

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

Product name	Group
tetraethyl silicate/ dioctyltin diacetate reaction products	Not Available
dioctyltin dinonanoate	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
tetraethyl silicate/ dioctyltin diacetate reaction products	Not Available
dioctyltin dinonanoate	Not Available

SECTION 15 Regulatory information

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

tetraethyl silicate/ dioctyltin diacetate reaction products is found on the following regulatory lists

US NIOSH Recommended Exposure Limits (RELs)

dioctyltin dinonanoate is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	Yes
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	Yes
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	No

Continued...

Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

None listed

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (tetraethyl silicate/ dioctyltin diacetate reaction products)
Canada - NDSL	No (tetraethyl silicate/ dioctyltin diacetate reaction products; dioctyltin dinonanoate)
China - IECSC	No (tetraethyl silicate/ dioctyltin diacetate reaction products)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (tetraethyl silicate/ dioctyltin diacetate reaction products)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (tetraethyl silicate/ dioctyltin diacetate reaction products)
Taiwan - TCSI	Yes
Mexico - INSQ	No (tetraethyl silicate/ dioctyltin diacetate reaction products; dioctyltin dinonanoate)
Vietnam - NCI	No (tetraethyl silicate/ dioctyltin diacetate reaction products)
Russia - FBEPH	No (tetraethyl silicate/ dioctyltin diacetate reaction products; dioctyltin dinonanoate)
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	13/02/2023
Initial Date	08/02/2022

SDS Version Summary

Version	Date of Update	Sections Updated
2.4	13/02/2023	Toxicological information - Acute Health (eye), Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (skin), Toxicological information - Acute Health (swallowed), Toxicological information - Chronic Health, Hazards identification - Classification, Exposure controls / personal protection - Engineering Control, Firefighting measures - Fire Fighter (fire/explosion hazard), First Aid measures - First Aid (eye), First Aid measures - First Aid (inhaled), First Aid measures - First Aid (skin), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Exposure controls / personal protection - Personal Protection (eye), Exposure controls / personal protection - Personal Protection (hands/feet), Physical and chemical properties - Physical Properties, Accidental release measures - Spills (minor)

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.

Continued...

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
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

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