

LIFESTRENGTH ANIONS BAND

Chemwatch Material Safety Data Sheet (REVIEW)
Review Date: 10-Nov-2011
NC517SCP

CHEMWATCH 1232886
Version No:2.0
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

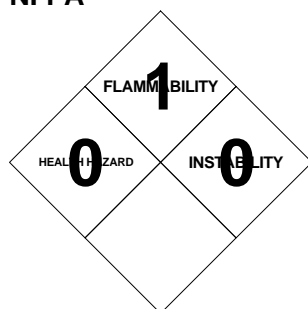
PRODUCT NAME

LIFESTRENGTH ANIONS BAND

STATEMENT OF HAZARDOUS NATURE

Not considered a hazardous substance according to the Controlled Products Regulations

NFPA



Hazard Scale:

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

SUPPLIER

Company: Kymco International China
Address:
Tiantou Industrial Zone
Hengli Town, Dongguan City
Guangdong 523478
China
Telephone: +86 0769 83738444 (Office Hours: 8:00am
- 6:00pm)
Emergency Tel: +86 0769 83738444 (Office Hours:
8:00am - 6:00pm)
Email: info@lifestrength.com

PRODUCT USE

Personal

SYNONYMS

"Silicon Anion Band"

Section 2 - HAZARDS IDENTIFICATION

CANADIAN WHMIS SYMBOLS

None

EMERGENCY OVERVIEW

RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

continued...

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Section 2 - HAZARDS IDENTIFICATION

SWALLOWED

■ The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (eg. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

■ Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract.

EYE

■ Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

SKIN

■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

INHALED

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

■ Not normally a hazard due to non-volatile nature of product.

CHRONIC HEALTH EFFECTS

■ Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
dimethylsiloxane, methyl vinyl, vinyl group- terminated	68083-18-1	55-75
crystalite	14464-46-1	22-42
dimethylsiloxane, hydroxy- terminated	70131-67-8	1-5

Section 4 - FIRST AID MEASURES

SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

- If this product comes in contact with eyes:
 - Wash out immediately with water.
 - If irritation continues, seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

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Section 4 - FIRST AID MEASURES

SKIN

- If skin or hair contact occurs:
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

- Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (kPa): Not Available

Upper Explosive Limit (%): Not Available

Specific Gravity (water=1): Not Available

Lower Explosive Limit (%): Not Available

EXTINGUISHING MEDIA

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

FIRE FIGHTING

- 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 courses.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- 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.
- Equipment should be thoroughly decontaminated after use.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- High temperature decomposition products include silicon dioxide, small amounts of formaldehyde, formic acid, acetic acid and traces of silicon polymers.
- These gases may ignite and, depending on circumstances, may cause the resin/polymer to ignite.
- An outer skin of silica may also form. Extinguishing of fire, beneath the skin, may be difficult.
- Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds.; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.
- In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL).are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC)
- A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.
- Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and

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Section 5 - FIRE FIGHTING MEASURES

can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.

- Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
 - Build-up of electrostatic charge may be prevented by bonding and grounding.
 - Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
 - All movable parts coming in contact with this material should have a speed of less than 1-meter/sec
 - A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an apparent ignition source
 - One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapours).
 - Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases.
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

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

PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

When handling larger quantities:

Respirator:

Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety glasses.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
- Do NOT use air hoses for cleaning
- Place spilled material in clean, dry, sealable, labelled container.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment and dust respirator.
- Prevent spillage from entering drains, sewers or water courses.
- Avoid generating dust.
- Sweep, shovel up. Recover product wherever possible.
- Put residues in labelled plastic bags or other containers for disposal.
- If contamination of drains or waterways occurs, advise emergency services.

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Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

RECOMMENDED STORAGE METHODS

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS

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

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m ³	STEL mg/m ³	Notes
US ACGIH Threshold Limit Values (TLV)	cristobalite (Silica, Crystalline - Cristobalite)	0.025		TLV Basis: pulmonary fibrosis; lung cancer

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA mg/m ³	STEL mg/m ³	Notes
Canada - Alberta Occupational Exposure Limits	crystalite (Silica-Crystalline, Respirable particulate - Crystalite)	0.025		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	crystalite (Silica - Crystalline, Crystalite)	0.05		
US - Minnesota Permissible Exposure Limits (PELs)	crystalite (Silica, crystalline crystalite, respirable dust)	0.05		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	crystalite (Silica, crystalline crystalite, respirable dust)	0.05		
US - Vermont Permissible Exposure Limits Table Z- 1- A Transitional Limits for Air Contaminants	crystalite (Silica, crystalline crystalite (as quartz), respirable dust)	See Table Z-3		
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	crystalite (Silica, crystalline crystalite (as quartz), respirable dust)	0.05		
US - California Permissible Exposure Limits for Chemical Contaminants	crystalite (Silica, crystalline Crystalite, respirable dust)	0.05		
US - Idaho - Limits for Air Contaminants	crystalite (Silica, crystalline crystalite - respirable dust)	[3]		
US - Idaho - Toxic and Hazardous Substances - Mineral Dust	crystalite (Silica: Crystalline: Crystalite: Use 1/2 the value calculated from the count or mass formulae for quartz.)	80 mg/M3		
US - Alaska Limits for Air Contaminants	crystalite (Silica, crystalline crystalite (as quartz), respirable dust)	0.05		
US - Michigan Exposure Limits for Air Contaminants	crystalite (Silica, crystalline crystalite, Respirable dust)	0.05		
Canada - Northwest Territories Occupational Exposure Limits (English)	crystalite (Silica - Crystalite (Total Mass))	0.15		
US - Washington Permissible exposure limits of air contaminants	crystalite (Silica, crystalline crystalite - Respirable fraction)	0.05	0.15	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	crystalite (Silica - Crystalline#: Crystalite (respirable fraction++))	0.05		
US - Hawaii Air Contaminant Limits	crystalite (Silica, crystalline crystalite (as quartz), respirable dust)	0.05		

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Source	Material	TWA mg/m ³	STEL mg/m ³	Notes
Canada - Northwest Territories Occupational Exposure Limits (English)	crystalobalite (Silica - Cristobalite (Respirable Mass))	0.05		
US - Wyoming Toxic and Hazardous Substances Table Z- 3 Mineral Dusts	crystalobalite (Silica: Crystalline - Cristobalite (Respirable))	10 / (%SiO ₂ +2) ²		
US - Wyoming Toxic and Hazardous Substances Table Z- 3 Mineral Dusts	crystalobalite (Silica: Crystalline - Cristobalite (Total Dust))	30 / (%SiO ₂ +2) ²		
US - Oregon Permissible Exposure Limits (Z- 3)	crystalobalite (Silica: Crystalline Cristobalite (respirable))	0.05		
Canada - Nova Scotia Occupational Exposure Limits	crystalobalite (Silica, Crystalline - Cristobalite)	0.025		TLV Basis: pulmonary fibrosis; lung cancer
Canada - Prince Edward Island Occupational Exposure Limits	crystalobalite (Silica, Crystalline - Cristobalite)	0.025		TLV Basis: pulmonary fibrosis; lung cancer
US - Oregon Permissible Exposure Limits (Z- 1)	crystalobalite (Particulates not otherwise regulated (PNOR) (f) Respirable Fraction)	5		*

The following materials had no OELs on our records

- dimethylsiloxane, methyl vinyl, vinyl group- terminated:

CAS:68083- 18- 1

EMERGENCY EXPOSURE LIMITS

Material
crystalobalite|32333

Revised
25

IDLH

MATERIAL DATA

DIMETHYLSILOXANE, HYDROXY-TERMINATED:
LIFESTRENGTH ANIONS BAND:

■ Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

overexposure.

LIFESTRENGTH ANIONS BAND:

■ It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

DIMETHYLSILOXANE, METHYL VINYL, VINYL GROUP-TERMINATED:

- No exposure limits set by NOHSC or ACGIH.

CRISTOBALITE:

■ The concentration of dust, for application of respirable dust limits, is to be determined from the fraction that penetrates a separator whose size collection efficiency is described by a cumulative log-normal function with a median aerodynamic diameter of 4.0 μm (+-) 0.3 μm and with a geometric standard deviation of 1.5 μm (+-) 0.1 μm , i.e..generally less than 5 μm .

For cristobalite:

Cristobalite produces a more severe response, than does quartz, on lung function and disease. The fibrosis produced by cristobalite is diffuse rather than nodular. The TLV-TWA is thought to be protective against pulmonary fibrosis associated with exposure at higher levels. NIOSH has designated cristobalite as a potential occupational carcinogen.

WARNING: For inhalation exposure ONLY:

This substance has been classified by the ACGIH as A2 Suspected Human Carcinogen.

PERSONAL PROTECTION

EYE

- 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 lens 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].

HANDS/FEET

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

- 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).

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- 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) 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) is recommended.
- Contaminated gloves should be replaced.

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.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

- No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
 - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
 - (b): filter respirators with absorption cartridge or canister of the right type;
 - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

State	Solid	Molecular Weight	Not Available
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	Not Available	Solubility in water (g/L)	Immiscible
Flash Point (°C)	Not Available	pH (1% solution)	Not Applicable
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Applicable
Autoignition Temp (°C)	Not Available	Vapour Pressure (kPa)	Not Available
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	Not Available
Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Available

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

solid (not in a respirable form)

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Product is considered stable and hazardous polymerisation will not occur.

STORAGE INCOMPATIBILITY

- Avoid contamination of water, foodstuffs, feed or seed.

- Avoid reaction with oxidising agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

Lifestrength Anions Band

TOXICITY AND IRRITATION

- Not available. Refer to individual constituents.

Section 12 - ECOLOGICAL INFORMATION

DIMETHYLSILOXANE, METHYL VINYL, VINYL GROUP-TERMINATED:

CRISTOBALITE:

- For silica:

The literature on the fate of silica in the environment concerns dissolved silica in the aquatic environment, irrespective of its origin (man-made or natural), or structure (crystalline or amorphous). Indeed, once released and dissolved into the environment no distinction can be made between the initial forms of silica. At normal environmental pH, dissolved silica exists exclusively as monosilicic acid $[\text{Si}(\text{OH})_4]$. At pH 9.4 the solubility of amorphous silica is about 120 mg SiO_2/l . Quartz has a solubility of only 6 mg/l, but its rate of dissolution is so slow at ordinary temperature and pressure that the solubility of amorphous silica represents the upper limit of dissolved silica concentration in natural waters. Moreover, silicic acid is the bioavailable form for aquatic organisms and it plays an important role in the biogeochemical cycle of Si, particularly in the oceans.

In the oceans, the transfer of dissolved silica from the marine hydrosphere to the biosphere initiates the global biological silicon cycle. Marine organisms such as diatoms, silicoflagellates and radiolarians build up their skeletons by taking up silicic acid from seawater. After these organisms die, the biogenic silica accumulated in them partly dissolves. The portion of the biogenic silica that does not dissolve settles and ultimately reaches the sediment. The transformation of opal (amorphous biogenic silica) deposits in sediments through diagenetic processes allows silica to re-enter the geological cycle. Silica is labile between the water and sediment interface.

Ecotoxicity:

Fish LC50 (96 h): Brachydanio rerio >10000 mg/l; zebra fish >10000 mg/l

Daphnia magna EC50 (24 h): >1000 mg/l; LC50 924 h): >10000 mg/l.

DO NOT discharge into sewer or waterways.

DIMETHYLSILOXANE, HYDROXY-TERMINATED:

- For siloxanes:

Environmental fate:

It is well accepted that polydimethylsiloxane fluids become permanent residents of sediment but should not exert adverse environmental effects.

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Section 12 - ECOLOGICAL INFORMATION

Silicone fluids are very surface active because the flexible siloxane linkages permit alignment of the hydrophobic methyl substituents towards the non-polar phase, and of the polysiloxane backbone towards the polar phase. The polar medium is generally water, and a polar media to which polydimethylsiloxanes become attached may be textiles, sewage sludge, hair, algae, sediment etc. In aqueous environments, polydimethylsiloxanes are adsorbed onto sedimenting particles. Also, in the presence of nitrate ions, which exist at various concentrations in the environment, short chain siloxanes are photodegraded to the level of silicate within days

The stability of the siloxanes, desirable from a technical point of view, makes the siloxanes very persistent, and once released to the environment the siloxanes remain for many years.

The main source of releases of siloxanes to the air is volatile siloxanes used in cosmetics, wax, polishes, and to a minor extent in several other applications. the volatile siloxanes may account for a significant part of the siloxanes used for cosmetics.

Non-volatile silicone fluids used in cosmetics, wax, polishes, cleaning products and for textile applications (softeners) will to a large extent end up in wastewater and be directed to wastewater treatment plants.

The cyclic siloxanes and small-chain linear siloxanes are bioconcentrated (bioconcentration factors for long-chained siloxanes have not been assessed). The estimated bioconcentration factors (BCF) of the small siloxanes range from 340 for HMDS to 40,000 for a phenylated trisiloxane (phenyl trimethicone). The small phenylated siloxanes seem to have very high BCF, and model estimates indicate that these substances are the most toxic for aquatic organisms.

PBT profiler screening

In order to make a first comparison between the substances as to persistence, bioaccumulation and toxicity, the substances were screened using the PBT profiler developed by U.S. EPA (U.S. EPA 2003). The profiler uses a procedure to predict persistence, bioaccumulation, and toxicity of organic chemicals on the basis of the chemical structure and physical

parameters of the substances combined with experimental parameters for substance with a similar structure, using a QSAR approach.

The results for six members of the siloxane family predict the highest bioconcentration factors for the two phenyl siloxanes, one order of magnitudes higher than the values for the cyclic siloxanes and two orders of magnitudes higher than the values for the small linear methyl siloxanes. The predicted toxicity is as well significantly higher (lowest ChV values) for the phenyl siloxanes. The predicted half-life is nearly the same for all substances.

Using U.S. EPA's criteria, the screening indicates that all substances are of high concern as to environmental toxicity, and that the phenyl siloxanes are considered very bioaccumulative.

Ecotoxicity:

The environmental fate and effects of volatile methylsiloxanes (mainly cyclosiloxanes) and polydimethylsiloxane (PDMS) have been reported:

For octamethylcyclosiloxane:

Fish acute LC50 (14 day):: rainbow trout 10 ug/l;

sheepshead minnow >6.3 ug/l

Daphnia magna acute EC50 (48 h): >15 ug/l; NOEC 15 ug/l

Mysid shrimp acute LC50 (96 h): >9.1 ug/l; NOEC 9.1 ug/l

For PDMS

Daphnia magna NOEC 572 mg/kg

Physical effects such as surface entrapment have been observed when testing aquatic invertebrates in clean laboratory water, but similar effects are not expected in natural environments where a large variety of other surfaces provide opportunities for deposition.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material)

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LIFESTRENGTH ANIONS BAND

Chemwatch Material Safety Data Sheet (REVIEW)

Review Date: 10-Nov-2011

NC517SCP

CHEMWATCH 1232886

Version No:2.0

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Section 13 - DISPOSAL CONSIDERATIONS

- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: TDG, IATA, IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

Regulations for ingredients

dimethylsiloxane, methyl vinyl, vinyl group-terminated (CAS: 68083-18-1) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)"

crystalalite (CAS: 14464-46-1) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits", "Canada - British Columbia Occupational Exposure Limits", "Canada - Northwest Territories Occupational Exposure Limits (English)", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits", "Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "OECD Representative List of High Production Volume (HPV) Chemicals"

dimethylsiloxane, hydroxy-terminated (CAS: 70131-67-8,63148-60-7) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)", "OECD Representative List of High Production Volume (HPV) Chemicals"

No data for Lifestrength Anions Band (CW: 1232886)

Ce produit a été classé en accord avec les critères de risques du règlement sur les produits contrôlés, et les fiches signalétiques contiennent toutes les informations requises par le règlement sur les produits contrôlés.

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

#Regulations for ingredients

#dimethylsiloxane, methyl vinyl, vinyl group- terminated (CAS: 68083- 18- 1) is found on the following regulatory lists;

" Canada Domestic Substances List (DSL)"

#crystalalite (CAS: 14464- 46- 1) is found on the following regulatory lists;

" Canada - Alberta Occupational Exposure Limits" , " Canada - British Columbia Occupational Exposure Limits" , " Canada - Northwest Territories Occupational Exposure Limits (English)" , " Canada - Nova Scotia Occupational Exposure Limits" , " Canada - Prince Edward Island Occupational Exposure Limits" , " Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens" , " Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)" , " Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits" , " Canada Domestic Substances List (DSL)" , " Canada Ingredient Disclosure List (SOR/88- 64)" , " Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)" , " International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs" , " OECD Representative List of High Production Volume (HPV)

continued...

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Section 16 - OTHER INFORMATION

Chemicals"

#dimethylsiloxane, hydroxy- terminated (CAS: 70131- 67- 8, 63148- 60- 7) is found on the following regulatory lists;

" Canada Domestic Substances List (DSL)" , " OECD Representative List of High Production Volume (HPV) Chemicals"

#No data for Lifestrength Anions Band (CW: 1232886)

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name

CAS

dimethylsiloxane, hydroxy- terminated

70131- 67- 8, 63148- 60- 7

■ Classification of the mixture 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. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.

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

■ For detailed advice on Personal Protective Equipment, refer to the following Canadian Standards:

CAN/CSA-Z195 - Protective Footwear

Z195.1 - Guideline on Selection, Use, and Care of Protective Footwear

CAN/CSA-Z94.3 - Industrial Eye and Face Protectors

Z94.3.1 - Protective Eyewear User's Guide

CSA-Z94.4 - Selection, Use, and Care of Respirators

CAN/CSA-Z180.1 - Compressed Breathing Air and Systems.

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