Altex Sea~Barrier 3000 Antifouling

ALTEX COATINGS LTD

Chemwatch:	9-40721	Print Date:	12/11/2013
Version No:	1.3	Issue Date:	12/11/2013
Safety Data Sheet according to HSNO Regulations		S.GHS.NZL.EN	

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name:	Altex Sea~Barrier 3000 Antifouling
Chemical Name:	Not Applicable
Proper shipping name:	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Chemical formula:	Not Applicable
Other means of identification:	
CAS number:	Not Applicable

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

Relevant identified uses:	Use according to manufacturer's directions. Antifouling Coating

Details of the supplier of the safety data sheet

Registered company name:	ALTEX COATINGS LTD		
Address:	91-111 Oropi Road 3112 Bay of Plenty New Zealand		
Telephone:	+64 7 5411974		
Fax:	+64 7 5411310		
Website:			
Email:	neil.debenham@carboline.co.nz		

Emergency telephone number

Association / Organisation:	NZ Poisons Centre (0800-1630hr Mon-Fri)		
Emergency telephone numbers:	0800 764766		
Other emergency telephone numbers:	0800 764766		

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
+800 2436 2255	**+612 9186 1132**	

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

SECTION 2 Hazards identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Classified as Dangerous Goods for transport purposes.

GHS Classification[1]:

Chronic Aquatic Hazard Category 1, Reproductive Toxicity Category 2, STOT - RE Category 2, Flammable Liquid Category 3, Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1, Serious Eye Damage Category 1, Acute Toxicity (Oral) Category 4

Legend:*1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI*

Determined by Chemwatch using GHS/HSNO criteria :

9.1A, 6.8B, 6.9B (inhalation), 3.1C, 6.3A, 6.5B (contact), 8.3A, 6.1D (oral)

Label elements

GHS label elements

Signal word:	**DANGER**

Hazard statement(s):

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction

H318	Causes serious eye damage
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H410	Very toxic to aquatic life with long lasting effects

Supplementary statement(s):

Not Applicable

Precautionary statement(s): Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
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.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s): Response

P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
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.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see advice on this label).
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use… to extinguish.
P391	Collect spillage.

Precautionary statement(s): Storage

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

Precautionary statement(s): Disposal

(null)	(null)
P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
1317-39-1	40-50	copper(I) oxide
1314-13-2	10-20	zinc oxide
71-36-3	10-20	n-butanol
1330-20-7	10-20	xylene
8050-09-7	1-10	rosin-colophony
137-26-8	1-5	thiram

SECTION 4 First aid measures

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Description of first aid measures

Eye Contact:

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.

- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact:

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation:

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

Ingestion:

- **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.**
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

- **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

for copper intoxication:

- Unless extensive vomiting has occurred empty the stomach by lavage with water, milk, sodium bicarbonate solution or a 0.1% solution of potassium ferrocyanide (the resulting copper ferrocyanide is insoluble).
- Administer egg white and other demulcents.
- Maintain electrolyte and fluid balances.
- Morphine or meperidine (Demerol) may be necessary for control of pain.
- If symptoms persist or intensify (especially circulatory collapse or cerebral disturbances, try BAL intramuscularly or penicillamine in accordance with the supplier's recommendations.
- Treat shock vigorously with blood transfusions and perhaps vasopressor amines.
- If intravascular haemolysis becomes evident protect the kidneys by maintaining a diuresis with mannitol and perhaps by alkalinising the urine with sodium bicarbonate.
- It is unlikely that methylene blue would be effective against the occassional methaemoglobinemia and it might exacerbate the subsequent haemolytic episode.
- Institute measures for impending renal and hepatic failure.

[GOSSELIN, SMITH & HODGE: Commercial Toxicology of Commercial Products]

- A role for activated for charcoals or emesis is, as yet, unproven.
- In severe poisoning CaNa2EDTA has been proposed.

[ELLENHORN & BARCELOUX: Medical Toxicology]
For thiram intoxication:
Gastric lavage, then treat symptomatically.
No fats, oils or lipid solvents are to be consumed as they enhance absorption. Complete prohibition of alcohol for 10 days.
Contact doctor if alcohol is taken within 48 hours.
[Hazardous Chemicals Data Book]
Thiram induces the accumulation of acetaldehyde in the blood of rats receiving alcohol at the same time. After absorption thiram is distributed in all organs and is excreted mainly unchanged in urine and faeces. Some metabolism does occur with carbon disulfide being exhaled and dimethyl dithiocarbamate being excreted in the urine
Medical literature on human exposure to thiocarbamate derivatives is scarce.

- Animal studies suggest that contact dermatitis and thyroid hyperplasia may occur following exposure.
- These compounds do not have the cholinergic properties of structurally related carbamate insecticides.
- The usual measures for gut and skin contamination are recommended for large doses.
- Some thiocarbamates are structurally similar to disulfiram and may cause the characteristically unpleasant alcohol type reactions lasting for several hours; they may respond to fluids, oxygen and analgesics. Dysrhythmias may occur and patients with serious reactions should have cardiac monitoring.
- Precautions should be taken to prohibit intake of alcohol for 10 days.
- Fats, oils and lipid solvents must not be consumed as they may enhance absorption.

As a general rule thiocarbamates can be absorbed by the skin, mucous membranes and respiratory and gastrointestinal tract. They are eliminated quickly via expired air and urine. Two major pathways exist for the metabolism of thiocarbamates in mammals. One is via sulfoxidation and conjugation with glutathione. The conjugation product is cleaved to the cysteine derivative which is further metabolised to a mercapturic acid compound. The second route involves oxidation of the sulfur to a sulfoxide which is oxidised to a sulfone, or hydroxylation to compounds which enter the carbon metabolic pool.
For acute or short term repeated exposures to xylene:

- Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- Pulmonary absorption is rapid with about 60-65% retained at rest.
- Primary threat to life from ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 < 50 mm Hg or pCO2 > 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

BIOLOGICAL EXPOSURE INDEX - BEI
These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Methylhippu-ric acids in urine	1.5 gm/gm creatinine	End of shift	
	2 mg/min	Last 4 hrs of shift	

SECTION 5 Firefighting 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

Advice for firefighters

Fire Fighting:

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- 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.

Fire/Explosion Hazard:

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour forms an explosive mixture with air.
- Moderate explosion hazard when exposed to heat or flame.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include:carbon monoxide (CO)carbon dioxide (CO2)

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Minor Spills:

Environmental hazard - contain spillage.

- 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:

Environmental hazard - contain spillage.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid generation of static electricity.

Other information

- Store in original containers in approved flammable liquid storage area.
- Store away from incompatible materials in a cool, dry, well-ventilated area.
- **DO NOT** store in pits, depressions, basements or areas where vapours may be trapped.
- No smoking, naked lights, heat or ignition sources.
- Storage areas should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorised personnel - adequate security must be provided so that unauthorised personnel do not have access.
- Store according to applicable regulations for flammable materials for storage tanks, containers, piping, buildings, rooms, cabinets, allowable quantities and minimum storage distances.
- Use non-sparking ventilation systems, approved explosion proof equipment and intrinsically safe electrical systems.
- Have appropriate extinguishing capability in storage area (e.g. portable fire extinguishers - dry chemical, foam or carbon dioxide) and flammable gas detectors.
- Keep adsorbents for leaks and spills readily available.

Conditions for safe storage, including any incompatibilities

Suitable container:

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C)
- For manufactured product having a viscosity of at least 250 cSt. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used.

Storage incompatibility:

Xylenes:

- may ignite or explode in contact with strong oxidisers, 1,3-dichloro-5,5-dimethylhydantoin, uranium fluoride
- attack some plastics, rubber and coatings
- may generate electrostatic charges on flow or agitation due to low conductivity.
- Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
- Aromatics can react exothermically with bases and with diazo compounds.

Zinc oxide:

- slowly absorbs carbon dioxide from the air.
- may react, explosively with magnesium and chlorinated rubber when heated
- is incompatible with linseed oil (may cause ignition)

Package Material Incompatibilities:

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	zinc oxide	Zinc oxide fume / Zinc oxide Dust	5 (mgm3) / 10 (mgm3)	10 (mgm3)		The value for inhalable dust containing no asbestos and less than 1% free silica.
New Zealand Workplace Exposure Standards (WES)	n-butanol	n-Butyl alcohol			150 (mgm3) / 50 (ppm)	Skin absorption
New Zealand Workplace Exposure Standards (WES)	xylene	Xylene (o-, m-, p-isomers)	217 (mgm3) / 50 (ppm)			
New Zealand Workplace Exposure Standards (WES)	rosin-colophony	Rosin core solder thermal decomposition products as resin acids (colophony)				Sensitiser
New Zealand Workplace Exposure Standards (WES)	thiram	Thiram	1 (mgm3)			

Emergency Limits

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
copper(I) oxide	0.113(ppm)	3.38(ppm)	15(ppm)	113(ppm)
zinc oxide	15(ppm)	15(ppm)	15(ppm)	500(ppm)
n-butanol	50(ppm)	50(ppm)	50(ppm)	1400(ppm)
xylene	100(ppm)	130(ppm)	920(ppm)	2500(ppm)
rosin-colophony	0.1(ppm)	0.3(ppm)	40(ppm)	40(ppm)
thiram	5(ppm)	5(ppm)	5(ppm)	100(ppm)

Ingredient	Original IDLH	Revised IDLH
zinc oxide	2,500(mgm3)	500(mgm3)
n-butanol	8,000(ppm)	1,400 [LEL](ppm)
xylene	1,000(ppm)	900(ppm)
thiram	1,500(mgm3)	100(mgm3)

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.
For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Personal protection

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 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], [AS/NZS 1336 or national equivalent]

Skin protection:

See Hand protection below

Hand protection:

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

NOTE:

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

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.

Body protection:

See Other protection below

Other protection:

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

Thermal hazards:

Recommended material(s):	**Respiratory protection:**

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	Liquid
Odour	
Odour threshold	
pH (as supplied)	
Melting point / freezing point (°C)	
Initial boiling point and boiling range (°C)	117-138
Flash point (°C)	27
Evaporation rate	0.8
Flammability	
Upper Explosive Limit (%)	10
Lower Explosive Limit (%)	1.4
Vapour pressure (kPa)	0.9
Solubility in water (g/L)	Immiscible
Vapour density (Air = 1)	3.0

Relative density (Water = 1)	1.84
Partition coefficient n-octanol / water	
Auto-ignition temperature (°C)	
Decomposition temperature	
Viscosity (cSt)	1290
Molecular weight (g/mol)	
Taste	
Explosive properties	
Oxidising properties	
Surface Tension (dyn/cm or mN/m)	
Volatile Component (%vol)	23
Gas group	
pH as a solution(1%)	

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability:

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous reactions:

See section 7

Conditions to avoid:

See section 7

Incompatible materials:

See section 7

Hazardous decomposition products:

See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled:

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.
Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant 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.
Human subjects exposed to 24 ppm n-butanol experienced mild irritation which became objectionable. Headaches were reported at 50 ppm.
Exposure by mice to 6600 ppm produced signs of marked central nervous system (CNS) depression, including prostration after 2 hours, narcosis after 3 hours and some deaths.
Although n-butanol is odourous and generally possesses adequate warning properties, the olfactory senses may become fatigued.

Ingestion:

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
Effects on the nervous system characterise over-exposure to higher aliphatic alcohols. These include headache, muscle weakness, giddiness, ataxia, (loss of muscle coordination), confusion, delirium and coma. Gastrointestinal effects may include nausea, vomiting and diarrhoea. In the absence of effective treatment, respiratory arrest is the most common cause of death in animals acutely poisoned by the higher alcohols. Aspiration of liquid alcohols produces an especially toxic response as they are able to penetrate deeply in the lung where they are absorbed and may produce pulmonary injury. Those possessing lower viscosity elicit a greater response. The result is a high blood level and prompt death at doses otherwise tolerated by ingestion without aspiration. In general the secondary alcohols are less toxic than the corresponding primary isomers. As a general observation, alcohols are more powerful central nervous system depressants than their aliphatic analogues.

Skin Contact:

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.
The material may accentuate any pre-existing dermatitis conditionSkin contact with the material may damage the health of the individual; systemic effects may result following absorption.
Open cuts, abraded or irritated skin should not be exposed to this material
Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Exposure to copper, by skin, has come from its use in pigments, ointments, ornaments, jewellery, dental amalgams and IUDs and as an antifungal agent and an algicide.

Eye:

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
Workers exposed to 200 ppm n-butanol showed ocular symptoms including corneal inflammation, burning sensation, blurring of vision, lachrymation, and photophobia. 100 ppm produced no systemic effects and reports of irritation of the eyes was rare.
Copper salts, in contact with the eye, may produce conjunctivitis or even ulceration and turbidity of the cornea.

Chronic:

Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.
Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests.
Exposure to the material may cause concerns for humans owing to possible developmental toxic effects, generally on the basis that results in appropriate animal studies provide strong suspicion of developmental toxicity in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of other toxic effects.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population.
Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases.

TOXICITY	IRRITATION
Altex Sea~Barrier 3000 Antifouling	
Oral (Human) LC50: mg/kg	
copper(I) oxide	
Intraperitoneal (Mouse) LD50: 380 mg/kg	
Oral (rat) LD50: 470 mg/kg	
zinc oxide	
Oral (mouse) LD50: 7950 mg/kg	Eye (rabbit) : 500 mg/24 h - mild
Oral (Rat) LD50: >8437 mg/kg	Skin (rabbit) : 500 mg/24 h- mild
n-butanol	
Dermal (rabbit) LD50: 3400 mg/kg	Eye (human): 50 ppm - irritant
Inhalation (rat) LC50: 8000 ppm/4h	Eye (rabbit): 1.6 mg-SEVERE
Oral (rat) LD50: 790 mg/kg	Eye (rabbit): 24 mg/24h-SEVERE
	Skin (rabbit): 405 mg/24h-moderate
xylene	
Inhalation (rat) LC50: 5000 ppm/4h	Eye (human): 200 ppm irritant
Intraperitoneal (Mouse) LD50: 1548 mg/kg	Eye (rabbit): 5 mg/24h SEVERE
Intraperitoneal (Rat) LD50: 2459 mg/kg	Eye (rabbit): 87 mg mild
Oral (Mouse) LD50: 2119 mg/kg	Skin (rabbit):500 mg/24h moderate
Oral (rat) LD50: 4300 mg/kg	
Subcutaneous (Rat) LD50: 1700 mg/kg	

rosin-colophony

thiram

Dermal (rabbit) LD50: >2000 mg/kg*	Eye (rabbit): 100 mg/24h-moderate
Inhalation (rat) LC50: 500 mg/m3/4h	Skin (rabbit) LDLo: 1 mg/kg
Oral (rat) LD50: 560 mg/kg	

Altex Sea~Barrier 3000 Antifouling

The following information refers to contact allergens as a group and may not be specific to this product.
Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
No significant acute toxicological data identified in literature search.

ZINC OXIDE

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

N-BUTANOL

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. 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. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic).

XYLENE

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

ROSIN-COLOPHONY

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

THIRAM

The following information refers to contact allergens as a group and may not be specific to this product.
Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.

Acute Toxicity:	Acute Toxicity (Oral) Category 4	**Carcinogenicity:**	Not Applicable
Skin Irritation/Corrosion:	Skin Corrosion/Irritation Category 2	**Reproductivity:**	Reproductive Toxicity Category 2
Serious Eye Damage/Irritation:	Serious Eye Damage Category 1	**STOT - Single Exposure:**	Not Applicable
Respiratory or Skin sensitisation:	Skin Sensitizer Category 1	**STOT - Repeated Exposure:**	STOT - RE Category 2
Mutagenicity:	Not Applicable	**Aspiration Hazard:**	Not Applicable

CMR STATUS

SKIN

n-butanol	New Zealand Workplace Exposure Standards (WES) - Skin	Skin absorption

SECTION 12 Ecological information

Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
Toxic to fauna.
for n-butanol (syn: BA)
log Kow : 0.88
Koc : 71.6
Half-life (hr) air : 5-52
Half-life (hr) H2O surface water : 2.4-3022

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air

Bioaccumulative potential

Ingredient	**Bioaccumulation**

Mobility in soil

Ingredient	**Mobility**

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal:

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

Otherwise:

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

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction

Insure that the disposal of material is carried out in accordance with Hazardous Substances (Disposal) Regulations 2001.

SECTION 14 Transport information

Labels Required:

Marine Pollutant

HAZCHEM: •3YE; •3Y

Land transport (UN)

UN number	1263	**Packing group**	III
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	**Environmental hazard**	No relevant data
Transport hazard class(es)	Class: 3 Subrisk:	**Special precautions for user**	Special provisions 163; 223 limited quantity 5 L

Air transport (ICAO-IATA / DGR)

UN number	1263	**Packing group**	III
UN proper shipping name	Paint related material (including paint thinning or reducing compounds); Paint (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base)	**Environmental hazard**	No relevant data
Transport hazard class(es)	ICAO/IATA Class: 3 ICAO / IATA Subrisk: ERG Code: 3L	**Special precautions for user**	Special provisions: A3A72 Cargo Only Packing Instructions: 366 Cargo Only Maximum Qty / Pack: 220 L Passenger and Cargo Packing Instructions: 355 Passenger and Cargo Maximum Qty / Pack: 60 L Passenger and Cargo Limited Quantity Packing Instructions: Y344 Passenger and Cargo Maximum Qty / Pack: 10 L

Sea transport (IMDG-Code / GGVSee)

UN number	1263	**Packing group**	III
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT	**Environmental hazard**	No relevant data

	RELATED MATERIAL (including paint thinning or reducing compound)		
Transport hazard class(es)	IMDG Class: 3 IMDG Subrisk:	**Special precautions for user**	EMS Number: F-E,S-E Special provisions: 163 223 955 Limited Quantities: 5 L

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	**Ingredient**	**Pollution Category**	**Residual Concentration - Outside Special Area (% w/w)**	**Residual Concentration**
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances	n-butanol			

SECTION 15 Regulatory information

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

HSR Number	**Approval**
HSR000035	Ablative A Antifouling Range

copper(I) oxide(1317-39-1) is found on the following regulatory lists

"OECD List of High Production Volume (HPV) Chemicals","International Council of Chemical Associations (ICCA) - High Production Volume List","New Zealand Inventory of Chemicals (NZIoC)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Timber Preservatives, Antisapstains and Antifouling Paints","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Pesticides","Sigma-AldrichTransport Information","Acros Transport Information","Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)","International Maritime Dangerous Goods Requirements (IMDG Code)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1 Quantity limits","International Air Transport Association (IATA) Dangerous Goods Regulations","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Veterinary Medicines"

zinc oxide(1314-13-2) is found on the following regulatory lists

"New Zealand Cosmetic Products Group Standard - Schedule 6 Colouring Agents Cosmetic Products May Contain With Restrictions- Table 1: List fo Colouring Agents Allowed for use in Cosmetic Products","OECD List of High Production Volume (HPV) Chemicals","International Fragrance Association (IFRA) Survey: Transparency List","New Zealand Cosmetic Products Group Standard - Schedule 8: UV Filters Cosmetic Products May Contain With Restrictions - Table 2: Additional List of Permitted UV Filters whick Cosmetic Products May contain in New Zealand","New Zealand Inventory of Chemicals (NZIoC)","New Zealand Workplace Exposure Standards (WES)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Veterinary Medicines","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Timber Preservatives, Antisapstains and Antifouling Paints","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)","FisherTransport Information","Sigma-AldrichTransport Information","Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)","International Maritime Dangerous Goods Requirements (IMDG Code)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1 Quantity limits","International Air Transport Association (IATA) Dangerous Goods Regulations"

n-butanol(71-36-3) is found on the following regulatory lists

"OECD List of High Production Volume (HPV) Chemicals","International Fragrance Association (IFRA) Survey: Transparency List","International Council of Chemical Associations (ICCA) - High Production Volume List","IOFI Global Reference List of Chemically Defined Substances","New Zealand Inventory of Chemicals (NZIoC)","New Zealand Workplace Exposure Standards (WES)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Dangerous Goods","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 18: List of products to which the Code does not apply","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","FisherTransport Information","Sigma-AldrichTransport Information","Acros Transport Information","Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)","International Maritime Dangerous Goods Requirements (IMDG Code)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","International Air Transport Association (IATA) Dangerous Goods Regulations","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 17: Summary of minimum requirements"

xylene(1330-20-7) is found on the following regulatory lists

"International Fragrance Association (IFRA) Survey: Transparency List","International Council of Chemical Associations (ICCA) - High Production Volume List","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)","FisherTransport Information","Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)","International Maritime Dangerous Goods Requirements (IMDG Code)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","International Air Transport Association (IATA) Dangerous Goods Regulations","OSPAR List of Chemicals for Priority Action","OECD List of High Production Volume (HPV) Chemicals","New Zealand Inventory of Chemicals (NZIoC)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water","New Zealand Workplace Exposure Standards (WES)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Dangerous Goods","IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards"

rosin-colophony(8050-09-7) is found on the following regulatory lists

"International Fragrance Association (IFRA) Standards Prohibited","OECD List of High Production Volume (HPV) Chemicals","International Council of Chemical Associations (ICCA) - High Production Volume List","New Zealand Inventory of Chemicals (NZIoC)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","FisherTransport Information","Sigma-AldrichTransport Information","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","IMO IBC Code Chapter 17: Summary of minimum requirements","New Zealand Workplace Exposure Standards (WES)"

thiram(137-26-8) is found on the following regulatory lists

"United Nations List of Prior Informed Consent Chemicals","OECD List of High Production Volume (HPV) Chemicals","International Chemical Secretariat (ChemSec) SIN List (*Substitute It Now!)","New Zealand Cosmetic Products Group Standard - Schedule 4: Components Cosmetic Products Must Not Contain - Table 1","New Zealand Inventory of Chemicals (NZIoC)","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","New Zealand Workplace Exposure Standards (WES)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Timber Preservatives, Antisapstains and Antifouling Paints","United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Pesticides","Sigma-AldrichTransport Information","Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)","International Maritime Dangerous Goods Requirements (IMDG Code)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1 Quantity limits","International Air Transport Association (IATA) Dangerous Goods Regulations"

Altex Sea~Barrier 3000 Antifouling

SECTION 16 Other information

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.
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.