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MATERIAL SAFETY DATA SHEET – PAGE 1 OF 5

SILAX

This product is classified as hazardous according to criteria of NOHSC

Section 1 – Identification of the Material and Supplier

PRODUCT (MATERIAL) NAME: SILAX
OTHER NAMES:
RECOMMENDED USES: A single component general purpose water repellent
SUPPLIER NAME/ADDRESS: Aitken Freeman Pty Ltd – Factory 7, 7-9 Brough St, Springvale VIC 3171
TELEPHONE NUMBER: (03) 9701 3955 **FACSIMILE NUMBER:** (03) 9701 3956
EMERGENCY PHONE NUMBER: (03) 9701 3955 **HOURS:** 0800-1700 Mon-Fri

Section 2 – Hazards Identification

POISONS SCHEDULE: S5
HAZARD CLASSIFICATION: Classified as a **HAZARDOUS SUBSTANCE** according to criteria of NOHSC.
 Classified as **DANGEROUS GOODS** according to criteria of ADG Code.
RISK PHRASES:
R10: Flammable
R20/R21: Harmful by inhalation and in contact with skin
R36/R38: Irritating to eyes and skin
R40: Limited evidence of a carcinogenic effect
R52/R53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R65: Harmful: may cause lung damage if swallowed
R67: Vapours may cause drowsiness and dizziness
 Limited evidence that ingestion may produce health damage
 Limited evidence that cumulative effects may result following exposure
 Limited evidence that material may produce discomfort of the respiratory system
 Limited evidence that material may be harmful to the foetus/embryo
SAFETY PHRASES:
S16/S21: Keep away from sources of ignition, when using do not smoke
S9: Keep container in a well ventilated place
S53: Avoid exposure – obtain special instructions before use
S40: To clean the floor and all objects contaminated by this material, use water and detergent
S7: Keep container tightly closed
S35: This material and its container must be disposed of in a safe way
S13: Keep away from food, drink and animal foodstuffs
S27: Take off immediately all contaminated clothing
S26: In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or the Poisons Information Centre.
S46: If swallowed, immediately contact a doctor or Poisons Information Centre and show this container, label or MSDS
S57: Use appropriate container to avoid environmental contamination
S61: Avoid release to the environment. Refer to special instructions or safety data sheets
S60: This material and its container must be disposed of as hazardous waste

Section 3 – Composition / Information on Ingredients

INGREDIENTS:

Chemical Name:	Proportion:	CAS Number:
Methanol	< 1 %	67-56-1
White spirit	> 60 %	64742-82-1
Trimethoxy (2,4,4 – Trimethyl pentyl) silane	< 10 %	34396-03-7

Balance of formulation consists of ingredients below cut-off rates or ingredients determined not to be hazardous.

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Section 4 – First Aid Measures

INHALATION:	If inhaled, remove patient from contaminated area to fresh air. Lay patient down, keep warm and rested. Encourage patient to blow nose and clear breathing passages. If not breathing, apply artificial respiration. Seek medical attention if irritation persists.
INGESTION:	If swallowed, DO NOT induce vomiting. Rinse mouth with plenty of water. Seek immediate medical advice from a doctor or the Poisons Information Centre (13 11 26 Australia-wide).
SKIN:	If skin or hair contact occurs, remove all contaminated clothing and wash before reuse. Wash off skin and/or hair with running water and soap if available. Seek medical assistance if irritation persists.
EYES:	If product comes into contact with eyes, hold eyelids apart and flush the eye continuously with fresh running water. If pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
FIRST AID FACILITIES:	Eye wash and normal washroom facilities.
ADVICE TO DOCTOR:	Treat symptomatically. POISON INFORMATION CENTRE – 13 11 26 Australia-wide.

Section 5 – Fire Fighting Measures

EXTINGUISHING MEDIA:	Foam, dry chemical powder, BCF (where regulations permit), carbon dioxide, or fog (large fires only).
FIRE FIGHTING:	Alert Fire Brigade immediately. Product may be violently or explosively reactive. Wear breathing apparatus and gloves. Avoid bodily contact with substance or run-off. If safe, switch off electrical equipment until vapour fire hazard is removed. Use water delivered as a fine spray to control fire and cool adjacent areas. 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:	Liquid and vapour are flammable. Moderate fire hazard when exposed to heat or flame. Vapour forms an explosive mix 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.
HAZCHEM CODE:	3[Y]

Section 6 – Accidental Release Measures

EMERGENCY PROCEDURES:	Remove all ignition sources and clean up all spills immediately. Avoid breathing vapours and contact with skin or eyes. Control personal contact using protective equipment. Contain and absorb small quantities with vermiculite or other absorbent material. Wipe up and collect residues in a flammable waste container. Prevent by any means available spillage from entering drains or water courses. Proper Emergency Response Planning should be undertaken for protective actions in case of spillage.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP:	Refer to State Land Waste Management Authority. Empty containers must be decontaminated. Normally suitable for disposal at approved land waste sites.

Section 7 – Handling and Storage

PRECAUTIONS FOR SAFE HANDLING:	DO NOT allow clothing wet with material to stay in contact with skin. Electrostatic discharge may be generated during pumping - this may result in fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Avoid splash filling. 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. DO NOT use plastic buckets. Earth all lines and equipment. Use spark-free tools when handling. When handling, DO NOT eat, drink or smoke. Always wash hands with soap and water after handling. Work clothes should be laundered separately.
CONDITIONS FOR SAFE STORAGE:	Keep containers securely sealed when not in use. Avoid physical damage to containers. Containers, even when empty, may contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers. Store in original containers in approved flammable liquid storage area. DO NOT store in pits, depressions, basements or areas where vapours. No smoking, naked lights, heat or ignition sources. Keep containers securely sealed. Store away from incompatible materials in a cool, dry, well-ventilated area. Protect containers against physical damage and check regularly for leaks.
INCOMPATIBILITIES:	Avoid reaction with oxidising agents.

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Section 8 – Exposure Controls / Personal Protection

NATIONAL EXPOSURE STANDARDS:

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³
Australia Exposure Standards	White Spirit		790		

Other material ingredients have no listed OELS under the national standards.

BIOLOGICAL LIMIT VALUES:

Not established for the product.

ENGINEERING CONTROLS:

Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear. 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:

Avoid unnecessary contact as good work practice. Wash contaminated clothing and protective equipment before storing and reuse. Wash hands before eating, smoking, or using the toilet.

RESPIRATORY PROTECTION:

The use of a respirator or other device is recommended where vapour concentration is present. For assistance in selecting suitable equipment consult AS/NZ1715.

EYE PROTECTION:

Eye protective measures are normally necessary and are suggested when using this product. Consult AS1336 and AS/NZ1337.

PROTECTIVE GLOVES:

Rubber, PVC or other protective gloves are necessary, and desirable, especially if this product is being used frequently or for lengthy periods. Consult AS2161 for guidance.

CLOTHING:

Clean overalls should be worn, preferably with an apron. Consult AS2919 for clothing guidance.

SAFETY FOOTWEAR:

Wearing safety boots is advisory. Consult AS/NZ2210 for advice on Occupational Protective Footwear.

Section 9 – Physical and Chemical Properties

APPEARANCE (COLOUR, PHYSICAL FORM, SHAPE):

Clear flammable liquid with an aromatic hydrocarbon odour, does not mix with water.

PHYSICAL PROPERTIES:

MOLECULAR WEIGHT:

Liquid, does not mix with water. Floats on water.

MELTING RANGE:

Not applicable

SOLUBILITY IN WATER:

Not available

pH (1% solution):

Not available

Volatile Component (%vol):

Not available

Relative Vapour Density:

Not available

Lower Explosive Limit (%):

0.7

Autoignition Temp (°C):

Not available

State:

Liquid

BOILING RANGE:

162 - 192°C

SPECIFIC GRAVITY:

0.77 - 0.80

pH (as supplied):

Not available

Vapour pressure (kPa):

Not available

Evaporation Rate:

Not available

Flash Point:

42°C (ABEL)

Upper Explosive Limit (%):

6.5

Decomposition Temp (°C):

Not available

Viscosity:

Not available

Section 10 – Stability and Reactivity

CHEMICAL STABILITY:

Stable

CONDITIONS TO AVOID:

Keep away from incompatible materials

INCOMPATIBLE MATERIALS:

Oxidising agents

HAZARDOUS DECOMPOSITION PRODUCTS:

Hazardous polymerisation will not occur

HAZARDOUS REACTIONS:

None

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Section 11 – Toxicological Information

TOXICOLOGY INFORMATION:

No toxicity data is available for this product, however toxicity information for constituent ingredients are stated below. 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. CARCINOGEN IARC: International Agency for Research on Cancer (IARC) Carcinogens: xylene Category: Group 3: Not classifiable as to carcinogenicity to humans. REPROTOXIN ILOEI: ILO Chemicals in the electronics industry that have toxic effects on reproduction: xylene

HEALTH EFFECTS FROM THE LIKELY ROUTES OF EXPOSURE:

INHALATION:

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. Inhalation hazard is increased at higher temperatures. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination. If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

INGESTION:

Accidental ingestion of the material may be damaging to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733). Ingestion of petroleum hydrocarbons may produce irritation of the pharynx, oesophagus, stomach and small intestine with oedema and mucosal ulceration resulting; symptoms include a burning sensation in the mouth and throat. Large amounts may produce narcosis with nausea and vomiting, weakness or dizziness, slow and shallow respiration, swelling of the abdomen, unconsciousness and convulsions. Myocardial injury may produce arrhythmias, ventricular fibrillation and electrocardiographic changes. Central nervous system depression may also occur. Light aromatic hydrocarbons produce a warm, sharp, tingling sensation on contact with taste buds and may anaesthetise the tongue. Aspiration into the lungs may produce coughing, gagging and a chemical pneumonitis with pulmonary oedema and haemorrhage. Considered an unlikely route of entry in commercial/industrial environments The liquid may produce considerable gastrointestinal discomfort and may be harmful or toxic if swallowed. Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

SKIN: Skin contact with the material may be harmful; systemic effects may result following absorption. The material produces moderate skin irritation; evidence exists, or practical experience predicts, that the material either produces moderate inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant, but moderate, 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. Aromatic hydrocarbons may produce skin irritation, vasodilation with erythema and changes in endothelial cell permeability. Systemic intoxication, resulting from contact with the light aromatics, is unlikely due to the slow rate of permeation. Branching of the side chain appears to increase percutaneous absorption. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

EYES: Evidence exists, or practical experience predicts, that the material may cause severe 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) experimental animals. Eye contact may cause significant inflammation with pain. Corneal injury may occur; permanent impairment of vision may result unless treatment is prompt and adequate. Repeated or prolonged exposure to irritants may cause inflammation characterised by a temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. Petroleum hydrocarbons may produce pain after direct contact with the eyes. Slight, but transient disturbances of the corneal epithelium may also result. The aromatic fraction may produce irritation and lachrymation. The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.

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Section 12 – Ecological Information

Marine Pollutant: Not Determined

The lower molecular weight hydrocarbons are expected to form a "slick" on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxy radicals. Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions (isomerised olefins and alkenes show variable results). Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process. Under aerobic conditions the material will degrade to water and carbon dioxide, while under anaerobic processes it will produce water, methane and carbon dioxide. Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods. Drinking Water Standards: hydrocarbon total: 10 ug/l (UK max.). 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. DO NOT discharge into sewer or waterways.

Section 13 – Disposal Considerations

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 licenced land-fill or Incineration in a licenced apparatus after admixture with suitable combustible material) Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. 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.

Section 14 – Transport Information

UN NUMBER: 1866
UN PROPER SHIPPING NAME: RESIN SOLUTION, flammable (contains naphtha petroleum, light aromatic solvent and xylene)
DANGEROUS GOODS CLASS: 3
SUBSIDIARY RISK: None
PACKING GROUP: III
HAZCHEM CODE: 3[Y]
LABELS REQUIRED: FLAMMABLE LIQUID

Section 15 – Regulatory Information

POISON SCHEDULE: S5
OHS: Unregulated
ENVIRONMENTAL: Unregulated
ADDITIONAL NATIONAL AND/OR INTERNATIONAL REGULATORY INFORMATION: Unregulated

Section 16 – Other Information

DATE OF PREPARATION OR LAST REVISION OF MSDS: 1st March 2008
CONTACT POINT: Aitken Freeman Pty Ltd
(03) 9701 3955
LITERATURE REFERENCES / SOURCES OF DATA:
Material Safety Data Sheets from Suppliers
List of Designated Substances – Worksafe Australia (on-line)
Australian Dangerous Goods Code 6th Edition
Standard for the Uniform Scheduling of Drugs and Poisons No 19

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