

5.17.1. Material Safety Data Sheet for Enhance-Plus

SECTION 1 – STATEMENT OF HAZARDOUS NATURE CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Statement of Hazardous Nature of Product

Classified as hazardous according to criteria of Worksafe Australia.
Hazardous according to Council Directive 1999/45/EC and its subsequent amendments.

Company Details

Company: DRY TREAT LTD
Address: 220 Pacific Hwy, Crows Nest NSW 2065 Australia
P.O. Box 551, St Leonards NSW 1590 Australia
Tel: +61 2 9954 3211 Fax: +61 2 9954 3162
Company Reg. No.: 430 6569

24 Hours Emergency Telephone: +61 2 9954 3211
800-255-3924 (Chem-Tel, Inc. USA)

IDENTIFICATION

Substance: Silicone
Product Name: **Enhance-Plus**
Other Names: Not applicable
**Manufacturers
Product Code:** 030525, 030530

Product Use: Water, stain protection and enhancement for masonry substrate

Creation Date: August 2004
Revision Date: July 2005

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Name: (%v/v)	CAS Number	Proportion
Decamethylcyclopentasiloxane:	541-02-6	>45%
Dimethyl, phenyl siloxane, methoxy-terminated:	68957-04-0	10-<30%
Methyltrimethoxysilane:	1185-55-3	<1.65%
N-Octyltriethoxysilane:	2943-75-1	<1.25%
Tetrabutyl titanate:	5593-70-4	<0.65%
Octamethylcyclotetrasiloxane:	556-67-2	<0.65%
Methyl alcohol:	67-56-1	<0.15%
Dimethyldimethoxysilane:	1112-39-6	<0.15%
Ingredients determined not to be hazardous to 100%		

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Approved Criteria Harmful Xn;
Irritant Xi;
Harmful if swallowed R22;
Irritating to eyes and skin R36/38;
Possible risk of impaired fertility R62;
May cause long-term adverse effects in the aquatic environment R53;
Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed R39/23/24/25;
Toxic by inhalation in contact with skin and if swallowed R23/24/25.

Classification (Calculated): Safety Phrases S23(S), S24, S51.

SUSDP Classification: Not scheduled
ADG Classification: Flammable Liquid N.O.S.(Cyclosiloxane / Alkylsilane)
UN Number: 1993
Packaging Group: III
HAZCHEM CODE: Not applicable
Colour: Straw
Physical description: Liquid
Odour: Strong odour
Major Health Hazards: Harmful if swallowed

POTENTIAL HEALTH EFFECTS

Inhalation

Short term exposure: Vapours may irritate nose and throat. Vapour overexposure may cause drowsiness.

Long term/Repeated exposure: Product generates methyl alcohol which may cause blindness and damage to nervous system. Overexposure by inhalation may injure the following organ(s): Liver, Reproductive System.

Skin Contact

Short term exposure: May cause moderate irritation to skin.

Long term/Repeated exposure: No known applicable information

Eye Contact

Short term exposure: Direct contact irritates slightly with redness and swelling.

Long term/Repeated exposure: After continued exposure to high vapour/fog concentrations there is the risk of eye irritation. Direct and repeated contact with the liquid could lead to damage to eyes. This may include damage to conjunctiva and cornea.

Ingestion

Short term exposure: Product generates methyl alcohol. Swallowing large quantities can result in blindness and eventually death.

Long term/Repeated exposure: Product generates methyl alcohol. Swallowing large quantities can result in blindness and eventually death. Repeated ingestion of large amounts may result in liver damage and internal injury.

Other relevant information:

The above listed potential effects of exposure are based on data and results of studies performed upon individual components. The finished product has not been tested as a whole.

CARCINOGEN STATUS

NOHSC: Not Classified
Mutagenic Effects: None known
Reproductive Effects: None known
Carcinogenic Effects: None known
Other Health Hazard: For individual ingredient information octamethylcyclotetrasiloxane (D4), decamethylcyclopentasiloxane (D5) and Ethyl Alcohol see comment in "Section 11 -*Toxicological Information*". Prolonged over exposure to Ethyl Alcohol by ingestion has caused human birth defects.

SECTION 4 – FIRST AID MEASURES

Scheduled Poisons

Not applicable

Inhalation

Remove people affected by vapours to fresh air. Obtain medical attention if ill effects persist.

Skin contact

If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Seek medical advice if irritation develops or persists.

Eye contact

If in eyes, hold eyelids apart and flush the eye continuously with running water, continue flushing until advised to stop by the Poisons Information Center or a doctor or for at least 15 minutes.

Ingestion

Get medical attention.

First Aid facilities

None should be required

Notes to physicians

Treat symptomatically. Treat same as methyl alcohol poisoning.

SECTION 5 – FIRE FIGHTING MEASURES

Fire and Explosion Hazards:

Fire: Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool. Self-contained breathing apparatus and protective clothing should be worn in fighting large fire involving chemicals.

Explosion: Upper and lower flammability limits have not been determined for the product.

Extinguishing Media: On large fire use foam, CO₂, dry powder, dry chemical, water spray.

On small fire use carbon dioxide (CO₂), dry chemical or water spray. Water may be used to flush away residue. Water can be used to cool fire exposed containers.

Fire Fighting: Self-contained breathing apparatus and fire fighting clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your emergency plan. Use water spray to cool fire exposed surfaces and any adjacent storage vessels. Remove container from the path of the fire if safe to do so.

Flashpoint (closed cup): approximately 149°F / 65°C

HAZCHEM Code: Not applicable.

Hazardous Decomposition: Thermal breakdown of this product during fire or very high heat conditions may evolve carbon dioxides, traces of incompletely burned carbon compounds, silicon dioxide, formaldehyde and metal oxides.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Occupational Release:

Extinguish or remove all sources of ignition and stop leak if safe to do so. Determine whether to evacuate or isolate the spill area according to your local emergency plan. Contain the spill and absorb with sand, earth, sawdust or vermiculite. Place used absorbent in suitable steel containers and follow state or local regulations for the disposal of the waste. The area of the spill may become slippery. After removing the absorbent any material should be cleaned with detergent and water (please note that the detergent may also make the surface slippery. The area must be thoroughly flushed with water as the final step in the clean-up procedure). If spills occur in an enclosed area an approved respirator should be used. For large spills, self contained breathing apparatus should be used. Safety goggles, boots, gloves and full-length clothing should be used during clean-up procedures. Do not allow the spilled product to enter drains, sewers or water courses – inform local authorities if this occurs. Use sand, earth or other appropriate barriers to contain spill.

Spill Protective Equipment:

Eye: Use full-face respirator. Alternatively, use goggles or preferably a full-face shield.

Skin: Full-length clothing, gloves and boots should be used in a spill scenario. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective suit is recommended for a large spill.

Inhalation: Use self-contained breathing apparatus (SCBA) or other supply-air respirator for large spills in confined areas. Approved organic vapour particulate mask should be used for small spills, Australia AS1716, United State of America NIOSH/MSHA approved respirators.

Precautions: Avoid eye exposure. Avoid skin contact. Avoid breathing mist. Keep container closed.

Comments: Product evolves flammable ethyl alcohol, methyl alcohol and n-butyl alcohol when exposed to water or humid air. When heated in air above 300°F (149°C) Traces of benzene (carcinogen) may form. When heated in air above 302°F (150°C) formaldehyde (carcinogen) vapours may form. Keep vapour concentrations within Occupational Health and Safety exposure limit. Review the Occupational Health and Safety regulation for benzene and formaldehyde for detailed information on safe handling requirements.

SECTION 7 – HANDLING AND STORAGE

Handling

The material should be used in a well ventilated area to minimise the potential for the build up of mists or vapours above the nominated exposure levels. Forced ventilation should be used if there is the potential for vapours to exceed these nominated levels. It is recommended that safety glasses, goggles or preferably a full-face shield be used if there is any potential for the product to enter the eye via processes such as splashes. Gloves and full-length clothing should also be worn. As vapours may ignite sources of ignition should be avoided (DO NOT smoke). The material should not be allowed to enter drains, sewers or waterways – inform local authorities if this occurs. Good personal hygiene practices, such as washing hands before eating, smoking or drinking should be observed.

Storage

Store material in a cool, dry and well ventilated area, out of direct sunlight and away from heat and ignition sources. Store material away from water, moisture, humid air and oxidising agents. Vapours may react with oleum, concentrated sulphuric acid, nitric acid, strong bases, aliphatic amines and isocyanates. Containers should always be kept closed in storage and properly labelled. Do not store in low or enclosed areas where vapours may become trapped, and to prevent the build-up of flammable vapours. Static electricity will accumulate and may ignite vapours. Prevent a possible fire hazard by bonding and grounding or inert gas purge. DO NOT pressurise, cut or heat containers. Empty product containers may contain residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS

Ethyl Alcohol

Australia NOHSC: TWA 1000 ppm, 1880 mg/m³.
OSHA PEL and ACGIH TLV: 1000 ppm.

Methyl Alcohol

Australia NOHSC: TWA 200 ppm, 262 mg/m³, STEL 250 ppm, 328 mg/m³ Can be absorbed through the skin.
OSHA PEL: 200 ppm and ACGIH TLV-skin: TWA 200 ppm, STEL 250ppm.

N-Butyl Alcohol

Australia NOHSC: TWA 50 ppm peak limitation, absorption through skin absorption.
OSHA PEL= TWA 100 ppm and ACGIH TLV= 50ppm, skin ceiling

ENGINEERING CONTROLS

Ventilation

Local exhaust and general ventilation is recommended. Keep within ambient temperatures. Maintain ambient concentration below the recommended threshold exposure limits. Ensure ventilation is adequate to maintain air concentrations below exposure standards. Avoid all ignition sources. Nearby equipment must be earthed. Hoses should be electrically continuous and containers bonded to avoid static charge build-up.

PERSONAL PROTECTION

Eye Protection

Avoid eye contact with liquid, vapour, mist or spray. Safety glasses or goggles are recommended. If there is the possibility of splashing a full face mask is recommended to prevent entry to the eye.

Skin Protection

Wash hands at meal times and at end of shift. Wear full-length clothing, boots and suitable protective gloves when handling this material. Nitrile gloves are recommended. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse.

Protective Material Types

Due to variations in glove construction, the user should make a final assessment.

Respirator

Use respiratory protection. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls. For routine use it is

recommended that an organic vapour/particulate respirator is used. Use at elevated temperature or aerosol/spray application may require added precautions. Avoid breathing vapours and airborne material. Use respirators in accordance with state regulation, Australia AS 1715 and AS 1716, United State of America OSHA Respirator Regulations (29 CFR 1910.134). Self-contained breathing apparatus (SCBA) or other supplied-air respirators are recommended when exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Additional information

These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9 – PHYSICAL AND CHEMICAL DESCRIPTION

Physical State:	Liquid
Colour:	Straw
Odour:	Strong odour
Boiling Point:	Not available
Freezing Point:	Not available
Vapor Pressure (20°C):	Not available
Specific Gravity:	0.97
Flashpoint (closed cup):	34°C
Viscosity (20°C):	5.776 mm ² /sec
Flammability Limits:	Not determined
Solubility in Water (20°C):	Not miscible
pH:	Not available
Volatility:	Not available
Odour Threshold:	Not available
Evaporation Rate:	Not available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity

Hazardous vapours may form due to possible reaction with water, moisture, or humid air. Static discharge may cause ignition of vapours, therefore earth containers whilst decanting.

Conditions to Avoid

Avoid contact with incompatible materials.

Incompatibilities

Oxidizing material can cause a reaction. Water, moisture or humid air can cause hazardous vapours to form as described in section 6 comments. Ethyl alcohol may react with oleum, concentrated sulphuric acid, nitric acid, strong bases, aliphatic amines and isocyanates.

Hazardous Decomposition: Thermal breakdown of this product during fire or very high heat conditions may evolve carbon dioxides, traces of incompletely burned carbon compounds, silicon dioxide, formaldehyde, benzene and metal oxides.

Polymerisation: Hazardous polymerisation will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Enhance-Plus

Local Effects: Irritant: skin, Harmful if swallowed.

Target Organs: Liver, kidney, central nervous system and reproductive system.

CLASSIFICATION OF HAZARDOUS INGREDIENTS

Ingredients

Dimethyl, phenyl siloxane,
methoxy-terminated:

Methyltrimethoxysilane:

N-Octyltriethoxysilane:

Tetrabutyl titanate:

Octamethylcyclotetrasiloxane:

Methyl alcohol:

R23/24/25

Classification

Xn R22

Xn R22

Xi R38

Xi R36/38

Repr. Cat. 3 R62, R53

T R39/23/24/25,

INDIVIDUAL INGREDIENT INFORMATION

Ethyl alcohol

Irritation Data:

Dermal LD50 (rabbit): 20g/kg

Toxicity Data:

Estimated fatal dose (human): 300-400 ml of pure ethanol; A study of the effects of ethanol inhalation in humans, found that between 5000-10000 ppm subjects experienced coughing and smarting of the eyes and nose, with the symptoms disappearing within minutes. People exposed at 15000 ppm experienced continuous lacrimation and coughing. Irritation of the eyes and respiratory tract were not noted at concentrations below 5000 ppm. Oral LD50 (rat): 7060 mg/kg; Inhalation LC50 (rat): 20,000 ppm/10 hrs

Local Effects:

Irritant: skin

Target Organs:

Liver, kidney and central nervous system

Mutagenic effects:

Not available

Reproductive effects:

Prolonged or repeated exposure may cause adverse reproductive effects.

Acute Toxicity Level:

Very toxic by dermal contact and ingestion. The NOHSC nominates ethanol as a material that absorption through the skin may be a significant source of exposure

Octamethylcyclotetrasiloxane / Decamethylcyclopentasiloxane

Irritation Data:

Not available

Toxicity Data:

Repeated inhalation or oral exposure of mice and rats to decamethylcyclopentasiloxane octamethylcyclotetrasiloxane produce an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly

sensitive in rodents, while similar mechanisms in humans are insensitive. Good industrial hygiene practice minimizes inhalation exposure to any chemical.

Reproductive effects: Octamethylcyclotetrasiloxane has the potential to affect certain reproductive parameters in laboratory animals exposed to vapour concentrations of 500 ppm and 700 ppm. No teratogenic effects were observed. The significance to humans of these findings is not known.

Carcinogenic effects: Recent results from a 2 year repeated vapour inhalation exposure study to rats' octamethylcyclotetrasiloxane (D4) and decamethylcyclopentasiloxane (D5) indicate effects (benign uterine adenomas) in the uterus of female animals. These effects occur at the highest exposure dose (700 ppm for D4 and 160 ppm for D5) only, a level that greatly exceeds typical workplace or consumer exposure. It is unlikely that industrial, commercial, or consumer uses of products containing D4 or D5 would result in a significant risk to humans.

Local Effects: Irritant: skin
Target Organs: Liver and reproductive system
Mutagenic effects: Not available.
Acute Toxicity Level: Not available.

SECTION 12 – ECOLOGICAL INFORMATION

Environmental fate and distribution

Keep away from drains, waterways and soil. This product hydrolyses in water or moist air, releasing methanol and organosilicons. This product does not contribute to the BOD.

Ecotoxicity effects

Bioaccumulation: Volatile silicone may bioaccumulate in closed test system

INDIVIDUAL INGREDIENT INFORMATION

Ethyl Alcohol

Aquatic toxicity: LC50 (fingerling trout, 24 hrs): 11200 mg/L; LC50 (guppy, 7 days): 11050ppm

SECTION 13 – DISPOSAL CONSIDERATIONS Methods for Disposal

Refer to Local, State and Federal Land Waste Management Authority for disposal instructions as disposal of collected product, residues, and cleanup materials may be governmentally regulated. Transfer solvent residues to a labelled, sealed container for disposal. Dispose of saturated absorbent or cleaning materials appropriately. Incinerate in a hazardous waste incinerator. Do not dispose into drain, soil, sewers or waterways.

SECTION 14 – TRANSPORT INFORMATION

Australian Dangerous Goods Code (ADG)

Proper Shipping Name: Flammable liquid, N.O.S.

Hazard Technical Name: Cyclosiloxane / Alkylsilane
Hazard Class: 3, Flammable liquid
UN/NA Number: 1993
Packaging Group: III

DOT Road Shipment Information (49 CFR 172.101)

Proper Shipping Name: Flammable liquid, N.O.S.
Hazard Technical Name: Cyclosiloxane / Alkylsilane
Hazard Class: 3, Flammable liquid
UN/NA Number: 1993
Packaging Group: III

Ocean Shipment (IMDG)

Proper Shipping Name: Flammable liquid, N.O.S. (Cyclosiloxane / Alkylsilane)
Hazard Class: 3, Flammable liquid
UN/NA Number: 1993
Packaging Group: III

Air Shipment (IATA)

Proper Shipping Name: Flammable liquid, N.O.S. (Cyclosiloxane / Alkylsilane)
Hazard Class: 3
UN Number: 1993
Packaging Group: III

SECTION 15 – REGULATORY INFORMATION

Chemical Inventories

AICS: All ingredients listed or exempt
EINECS: All ingredients listed or exempt
TSCA: All ingredients listed or exempt

SECTION 16 – OTHER INFORMATION

LABELLING DETAILS

Hazard symbol:	Xn Xi	Harmful Irritant
R-phrases:	R22 R36/38 R53 R62 R39/23/24/25 R23/24/25	Harmful if swallowed Irritating to eyes and skin May cause long-term adverse effects in the aquatic environment Possible risk of impaired fertility Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed Toxic by inhalation in contact with skin and if swallowed
S-phrases:	S23(S) S24 S51	Do not breathe spray Avoid contact with skin Use only in well-ventilated areas

Acronyms Dangerous Number	SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
	ADG Code	Australian Code for the Transport of Goods by Road and Rail
	CAS Number	Chemical Abstracts Service Registry
	UN Number	United Nations Number
	R-Phrase	Risk Phrases
	S-Phrase	Safety Phrases
	HAZCHEM	An emergency action code of numbers and letters which gives information to emergency services
	NOHSC	National Occupational Health and Safety
	AICS	Australian Inventory of Chemical Substances Commission
	EINECS	European Inventory of Existing Commercial Chemical Substances
TSCA	US Toxic Substances Control Act	

CONTACT POINT

For specialist advice, contact Technical Manager on +61 2 9954 3211

Important Note:

The information presented in this MSDS is intended as a guideline for the selection and use of E-P v2, and is accurate to the best of our knowledge at the time of publication. This is not a specification and is not to be used as a firm approval for the suitability of E-P v2 Sealer for any particular surface or substrate. Each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product. If clarification or further information is needed contact Dry-Treat Ltd.