Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
TWA CLEAR WOOD PRESERVATIVE

PRODUCT USE
A wood preservative to protect timber structures from wood decay.

SUPPLIER
Company: ITLS- TWA Australia Pty Ltd
Address:
250 Princes Highway
Dandenong
VIC, 3175
Australia
Telephone: +61 3 9791 8211
Emergency Tel:+61 3 9791 8211
Fax: +61 3 9791 8644

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.
COMBUSTIBLE LIQUID, regulated under AS1940 for Bulk Storage purposes only.

RISK
Risk Codes Risk Phrases
R36/37/38 • Irritating to eyes, respiratory system and skin.
R52 • Harmful to aquatic organisms.
R65 • HARMFUL- May cause lung damage if swallowed.
R67 • Vapours may cause drowsiness and dizziness.

SAFETY
Safety Codes Safety Phrases
S23 • Do not breathe gas/fumes/vapour/spray.
S24 • Avoid contact with skin.
S25 • Avoid contact with eyes.
S36 • Wear suitable protective clothing.
S37 • Wear suitable gloves.
S39 • Wear eye/face protection.
S401 • To clean the floor and all objects contaminated by this material, use water and detergent.
S13 • Keep away from food, drink and animal feeding stuffs.
S26 • In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
S46 • If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

continued...
Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>turpentine substitute</td>
<td>8030-30-6.</td>
<td>&gt;60</td>
</tr>
<tr>
<td>zinc naphthenate</td>
<td>12001-85-3</td>
<td>10-30</td>
</tr>
<tr>
<td>ingredients not contributing to the classification</td>
<td>balance</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

Section 4 - FIRST AID MEASURES

SWALLOWED
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Avoid giving milk or oils.
- Avoid giving alcohol.

EYE
- If this product comes in contact with the eyes:
  - Wash out immediately with fresh running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Seek medical attention without delay; if pain persists or recurs seek medical attention.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
- 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.

INHALED
- If fumes or combustion products are inhaled remove from contaminated area.
  - Lay patient down. Keep warm and rested.
  - Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
  - Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN
- Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically.
- Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.

FIRE/EXPLOSION HAZARD
- Combustible.
- Slight fire hazard when exposed to heat or flame.
Section 5 - FIRE FIGHTING MEASURES

- 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 dioxide (CO2), other pyrolysis products typical of burning organic material.
May emit clouds of acrid smoke.
May emit poisonous fumes.
May emit corrosive fumes.

FIRE INCOMPATIBILITY

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

HAZCHEM

None

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

MAJOR SPILLS

- Moderate hazard.
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

<table>
<thead>
<tr>
<th>Source</th>
<th>Material</th>
<th>TWA mg/m³</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Exposure Standards</td>
<td>turpentine substitute (Petrol (gasoline))</td>
<td>900</td>
<td>(see Chapter 16)</td>
</tr>
</tbody>
</table>

The following materials had no OELs on our records
- zinc naphthenate: CAS:12001-85-3

continued...
Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

MATERIAL DATA
TWA CLEAR WOOD PRESERVATIVE:
Not available

TURPENTINE SUBSTITUTE:
■ for benzene
Odour Threshold Value: 34 ppm (detection), 97 ppm (recognition)
NOTE: Detector tubes for benzene, measuring in excess of 0.5 ppm, are commercially available. The relative quality of epidemiological data and quantitative health risk assessments related to documented and theoretical leukaemic deaths constitute the basis of the TLV-recommendation.<</>.

For trimethyl benzene as mixed isomers (of unstated proportions)
Odour Threshold Value: 2.4 ppm (detection)
Use care in interpreting effects as a single isomer or other isomer mix. Trimethylbenzene is an eye, nose and respiratory irritant.
Odour threshold: 0.25 ppm.
The TLV-TWA is protective against ocular and upper respiratory tract irritation and is recommended for bulk handling of gasoline based on calculations of hydrocarbon content of gasoline vapour.

for ethyl benzene:
Odour Threshold Value: 0.46-0.60 ppm
NOTE: Detector tubes for ethylbenzene, measuring in excess of 30 ppm, are commercially available.
Ethyl benzene produces irritation of the skin and mucous membranes and appears to produce acute and chronic effects on the central nervous system.

for xylenes:
IDLH Level: 900 ppm
Odour Threshold Value: 20 ppm (detection), 40 ppm (recognition)
NOTE: Detector tubes for o-xylene, measuring in excess of 10 ppm, are available commercially. (m-xylene and p-xylene give almost the same response).<</>.

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

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience).

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.
Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers’ responses to various airborne concentrations.

PERSONAL PROTECTION

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

EYE
■ - Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET
■ - Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity.

OTHER
■ - Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.

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
Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Light yellow liquid with slight solvent odour; does not mix with water.

PHYSICAL PROPERTIES
Liquid.
Does not mix with water.
Floats on water.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Melting Range (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Boiling Range (°C)</td>
<td>152-198</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>&gt;84</td>
</tr>
<tr>
<td>Decomposition Temp (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Autoignition Temp (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Volatile Component (%vol)</td>
<td>70.4</td>
</tr>
</tbody>
</table>

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
- Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733).
- Ingestion may result in nausea, abdominal irritation, pain and vomiting.

EYE
- This material can cause eye irritation and damage in some persons.

SKIN
- The material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- The material may accentuate any pre-existing dermatitis condition.
- 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.

INHALED
- The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
- Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.
- Inhalation hazard is increased at higher temperatures.
- Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.

continued...
Section 11 - TOXICOLOGICAL INFORMATION

CHRONIC HEALTH EFFECTS
- Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
- Chronic inhalation exposures may show indications of peripheral neuropathy, a progressive nerve disorder of extremities.

TOXICITY AND IRRITATION
- Not available. Refer to individual constituents.

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms.

Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
<th>Bioaccumulation</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>turpentine substitute</td>
<td>No Data</td>
<td>No Data</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>zinc naphthenate</td>
<td>Available</td>
<td>Available</td>
<td>No Data</td>
<td>Available</td>
</tr>
</tbody>
</table>

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

COMBUSTIBLE LIQUID

Labels Required: COMBUSTIBLE LIQUID, regulated under AS1940 for Bulk Storage purposes only.

HAZCHEM: None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE S5

REGULATIONS

Regulations for ingredients:

- turpentine substitute (CAS: 8030-30-6) is found on the following regulatory lists:
  - Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - organic compounds)
  - Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Domestic water supply quality)
  - Australia Exposure Standards
  - Australia Hazardous Substances
  - Australia High Volume Industrial Chemical List (HVICL)
  - Australia Inventory of Chemical Substances (AICS)
  - Australia National Pollutant Inventory
  - Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)
  - Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)
  - Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
  - Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
  - GESAMP/EHS Composite List - GESAMP Hazard Profiles
  - IMO IBC Code Chapter 17: Summary of minimum
TWA CLEAR WOOD PRESERVATIVE

Chemwatch Independent Material Safety Data Sheet
Issue Date: 13-Mar-2012
9317SP

Section 15 - REGULATORY INFORMATION

- "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk",
- "IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO",
- "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",
- "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs",
- "International Fragrance Association (IFRA) Survey: Transparency List",
- "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index",
- "OECD List of High Production Volume (HPV) Chemicals",
- "OSPAR List of Chemicals for Priority Action",
- "OSPAR National List of Candidates for Substitution – Norway",
- "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

zinc naphthenate (CAS: 12001-85-3) is found on the following regulatory lists;
- "Australia Inventory of Chemical Substances (AICS)",
- "Australia National Pollutant Inventory"

No data for TWA Clear Wood Preservative (CW: 31-0538)

Section 16 - 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.

This is the end of the MSDS.