



MATERIAL SAFETY DATA SHEET

ECO XP

ISSUED

June 2013

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier: 46125 125ml, 46250 250ml, 46020 20L,
46200 200L, 46000 1000L cube

Product name: Eco XP

Chemical Name: Not applicable

Synonyms: Not available

Proper Shipping name: Not applicable

Chemical formula: Not applicable

Other means of identification: Not available

CAS number: Not applicable

Chemwatch: 4873-61

Version No: 3.1.1.1

Material Safety Data Sheet according to NOHSC and ADG requirements

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

Relevant identified uses: Petrol additive

Details of the supplier of the safety data sheet

Registered company name: Fuel & Infrastructure Management Australasia Pty Ltd
(FIMA)

Address: Unit 5, 58-60 Melbourne Road, Riverstone
NSW 2765, Australia

Telephone: 02 9627 2728

Fax: 02 9627 5728

Website: Not available

Email: sam@fimaoz.com.au

Emergency telephone number

Association/Organisation: Not available

Emergency telephone numbers: Not available

Other emergency telephone no. Not available

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code

Poisons Schedule: S5

Risk Phrases [1]

R23/25 Toxic by inhalation and if swallowed.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R65 HARMFUL – May cause lung damage if swallowed.

Legend:1. *Classified by Chemwatch*, 2. *Classification drawn from HSIS*, 3. *Classification drawn from EC Directive 1272/2008 – Annex VI*

Label elements

Relevant risk statements are found in section 2

Indication(s) of danger: T, Xn

Safety advice:

S01 Keep locked up

S07 Keep container tightly closed

S09 Keep container in a well ventilated place

S13 Keep away from food, drink and animal feeding stuffs

S20 When using do not eat or drink

- S23 Do not breathe gas/fumes/vapour/spray
- S28 After contact with skin, wash immediately with plenty of water
- S29 Do not empty into drains
- S35 This material and its container must be disposed of in a safe way
- S36 Wear suitable protective clothing
- S37 Wear suitable gloves
- S38 In case of insufficient ventilation, wear suitable respiratory equipment
- S40 To clean the floor and all objects contaminated by this material, use water and detergent
- S45 In case of accident or if you feel unwell, IMMEDIATELY contact Doctor or Poisons information Centre (show label if possible)
- S46 If swallowed, IMMEDIATELY contact Doctor or Poisons Information Center (show this container or label).
- S51 Use only in well ventilated areas.
- S56 Dispose of this material and its container at hazardous or special waste collection point.
- S63 In case of accident by inhalation: remove casualty to fresh air and keep at rest.

Other Hazards

May produce discomfort of the eyes, respiratory tract and skin

Vapours potentially cause drowsiness and dizziness

Repeated exposure potentially causes skin dryness and cracking

Cumulative effects may result following exposure

Skin contact may produce health damage

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances:

See section below for composition of mixtures

MIXTURES

CAS no	percentage (weight)	Name
	Greater than 60	heating oil
12108-13-3	less than 4	MANGANESE2-METHYLCYCLOPEN-TADIENYL TRICARBONYL

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures:

Eye contact:

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 contact:

- 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 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 needed
- Transport to hospital, or doctor

Ingestion:

- For advice, contact poisons information centre or doctor at once.
- Urgent hospital treatment is likely to be needed
- **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 ie becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink
- Transport to hospital or doctor without delay

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure

- Patients should be quickly evaluated for signs or respiratory distress (eg cyanosis, tachypnea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evident 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 stabilization of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment or bronchospasm because of potential myocardial sensitization to catecholamines. Inhaled cardioselective bronchodilators (eg Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

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 strong oxidizing agents as ignition may result

Advice for Firefighters

Fire Fighting:

- Alert Fire Brigade and tell them location and nature of hazard
- Wear breathing apparatus plus protective gloves
- Prevent, by any means available, spillage from entering drains or water course
- Use water delivered as a fine spray to control fire and cool adjacent areas.
- 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
- If safe to do so, remove containers from path of fire

Fire/Explosion Hazard:

- Combustible
- Slight fire hazard when exposed to heat or flame
- Heating may cause expansion or decomposition leading to violent rupture of containers
- On combustion, may emit toxic fumes of carbon monoxide (CO)
- May emit acrid smoke
- Mists containing combustible materials may be explosive

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor spills:

Slippery when spilt.

- 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 spill with sand, earth, inert material or vermiculite
- Wipe up
- Place in a suitable, labeled container for waste disposal

Major spills:

Slippery when spilt.

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
- No smoking, naked lights or ignition sources
- Increase ventilation
- Stop leak if safe to do so
- Contain spill with sand, earth or vermiculite
- Collect recoverable product into labeled containers for recycling
- Absorb remaining product with sand, earth or vermiculite
- Collect solid residues and seal in labeled drums for disposal
- Wash area and prevent runoff into drains
- If contamination of drains or waterways occurs, advise emergency services

Personal protective equipment advice is contained in Section 8 of the MSDS

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe 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
- **DO NOT enter confined spaces until atmosphere has been checked**
- Avoid smoking, naked lights or ignition sources

- Avoid contact with incompatible materials
- When handling, **DO NOT eat, drink or smoke**
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers
- Always wash hands with soap and water after handling
- Work clothes should be laundered separately
- Use good occupational work practice
- Observe manufacturers storage and handling recommendations contained within this MSDS
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

Other information:

- Store in original containers
- Keep containers securely sealed
- No smoking, naked lights or ignition sources
- Store in a cool, dry, well-ventilated area
- Store away from incompatible materials and foodstuff containers
- Protect containers against physical damage and check regularly for leaks
- Observe manufacturer's storage and handling recommendations contained within this MSDS

Conditions for safe storage, including any incompatibilities

Suitable container:

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

Storage incompatibility:

Avoid storage with oxidisers

X: must not be stored together

O: May be stored together with specific preventions

+: May be stored together

Package Material incompatibilities: N/A

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL
Aust. Exposure	manganese 2-methyl	Methylcyclopentadienyl	0.2(mgm3)	N/A
Standards	-cyclopentadienyl tricarbonyl	manganese tricarbonyl (as Mn)		

American conference of Governmental Industrial Hygienists (ACGIH) 4,5 is the documentation source

Emergency Limits

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
Manganese 2-methylcyclopentadienyl tricarbonyl	0.6(ppm)	0.6(ppm)	0.6(ppm)	7.5(ppm)

Ingredient	Original IDLH	Revised IDLH
Manganese 2-methylcyclopentadienyl Tricarbonyl	N.E. (mgm3) N.E. (ppm)	500(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.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:

Air speed:

Solvent, vapours, degreasing etc, evaporating from tank (in still air).	0.25-0.5m/s (50-100f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation).	0.5-1m/s (100-200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, Crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5m/s (200-500f/min)
Grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10m/s (500-2000f/min)

Within each range the appropriate value depends on:

Lower end of the range

1. Room air currents minimal or favourable to capture
2. Contaminants of low toxicity or of nuisance value only
3. Intermittent, low production
4. Large hood or large air mass in motion

Upper end of the range:

1. Disturbing room air circulation
2. Contaminants of high toxicity
3. High production, heavy use
4. Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimal of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Personal protection

- Gloves
- Long sleeved shirt
- Feet protection
- Goggles

Eye and face protection:

- Safety glasses with side shields, or as required
- 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 absorption 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:

- Butyl rubber gloves
- Neoprene gloves
- PVC gloves
- Safety footwear
- PVC boots

Body protection:

See other protection below

Other protection:

- Overalls
- Barrier cream
- Eyewash unit

Thermal hazards:

Recommended material(s)

PVC chemical resistant type. Butyl rubber. Neoprene

Respiratory protection:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties.

Appearance

Brown liquid with a petroleum odour, does not mix with water

Physical state	Liquid	Relative density (water=1)	N/A
Odour	N/A	Partition coefficient n-octanol/water	N/A
Odour threshold	N/A	Auto-ignition temp (degrees C)	N/A
pH (as supplied)	N/A	Decomposition temp	N/A
Melting point/freezing pt (degrees C)	N/A	Viscosity (cSt)	N/A
Initial boiling pt & boiling pt range (degC)	N/A	Molecular weight (g/mol)	not applicable
Flash point (degrees C)	greater than 61	Taste	N/A

Evaporation rate	N/A	Explosive properties	N/A
Flammability	N/A	Oxidising properties	N/A
Upper Explosive Limit (percentage)	N/A	Surface Tension (dyn/cm or mN/m)	N/A
Lower Explosive Limit (percentage)	N/A	Volatile Component (percentageVolume)	N/A
Solubility in water (g/L)	Immiscible	Gas group	N/A
Vapour density (Air=1)	greater than 1	pH as a solution (1percent)	N/A

SECTION 10: STABILITY AND REACTIVITY

Reactivity: See section 7

Chemical stability:

- Presence of incompatible materials
- Product is considered stable
- Hazardous polymerization 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 vapour is more likely at higher than normal temperatures.

Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.

Ingestion:

The liquid is highly discomforting. Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potential lethal chemical pneumonitis.

Skin Contact:

Limited 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 characterized 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.

Toxic effects may result from skin absorption. The material may accentuate any pre-existing skin condition.

Eye:

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterized by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Chronic:

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

Toxicity

Irritation

Eco XP

Not available

Manganese 2-methylcyclopentadienyl tricarbonyl

Dermal (rabbit) LD50: 140 mg/kg

Skin (rabbit): 100 mg/24h-mild

Inhalation (rat) LC50: 220 mg/m³/1h *

Inhalation (rat)LC50: 76 mg/m³/4h

Oral (rat) LD50 50mg/kg

Oral (rat) LD50:9mg/kg*

not available

Refer to individual constituents.

MANGANESE 2-METHYLCYCLOPENTADIENYL TRICARBONYL

For manganese 2-methylcyclopentadienyl tricarbonyl (MMT):

Genetic Toxicity

Bacterial Reverse Mutation Assay: The test substance was not mutagenic in this assay with or without metabolic activation.

In Vitro Chromosomal Aberration Assay in CHO cells: An increase in the percentage of cells that contained chromosome aberrations was observed in the presence of metabolic activation, but not in the absence of metabolic activation.

Mammalian Erythrocyte Micronucleus Test: Two studies were performed, both of which showed no elevation in micronuclei, thus no genotoxicity.

Repeated-dose toxicity: A 14 week inhalation study was conducted in rats, mice and primates at dose levels of 0.3, 3.5, 30.2 ug/L. Significant toxicity was observed at the mid and high exposure levels. Based on the results of this study, it was concluded that the mouse was the species most sensitive to vapour inhalation exposure to this test material followed by the rat and monkey respectively. In addition female rodents appeared to be more sensitive than male rodents. A NOAEL of 0.3mg/L was selected based on the increased blood urea nitrogen levels observed in rats at all exposure levels.

Developmental Toxicity:

Pregnant female rats were dosed on gestation days 6-15 with 0,2,0,4,5,6,5 or 9.0 mg/kg/day. Maternal toxicity was observed at the high dose level, 9mg/kg/day, as evidenced by anogenital staining and maternal weight loss early in the treatment period. A slight reduction in mean fetal body weights and a slight to moderate reduction in mean maternal body weight over the entire gestation period were noted at all treatment dose levels. No significant developmental toxicity was observed. The NOAEL for maternal effects was 6.5mg/kg and the NOAEL for developmental effects was greater than 9 mg/kg (the highest dose tested).

Reproductive Toxicity:

No published or unpublished reproductive toxicity studies on MMT were located; however, the 14 week repeat exposure inhalation study conducted in rats, mice and primates discussed above (dose levels of 0.3,3.5,30.2 ug/L) included the microscopic evaluation of both male and female rat and mouse and male primate reproductive organs. No reproductive toxicity was observed at the high exposure level in any species.

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

NOAEL (inhalation) 6.2mg/m³ (rats and mice).

Acute Toxicity	Acute Toxicity (inhalation)category 2
	Acute Toxicity (oral) category 3
Skin irritation/corrosion:	n/a
Serious Eye damage/irritation:	n/a
Respiratory or skin sensitization:	n/a
Mutagenicity:	n/a
Carcinogenicity:	n/a
Reproductivity:	n/a

STOT single exposure: n/a

STOT repeated exposure: STOT RE Category 2

Aspiration hazard: Aspiration Hazard category 1

CMR STATUS

SKIN

Manganese 2-methylcyclopentadienyl tricarbonyl

Australia Exposure Standards – Skin

SECTION 12: ECOLOGICAL INFORMATION:

Toxicity

DO NOT discharge into sewer or waterways.

Persistence and Degradability

Ingredient	Persistence: water/soil	Persistence: air
n/a	n/a	n/a

Bioaccumulative Potential

Ingredient	Bioaccumulation
n/a	n/a

Mobility in soil:

Ingredient	Mobility
n/a	n/a

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product/packaging disposal

- Consult manufacturer for recycling options and recycle where possible
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site
- Recycle containers if possible, or dispose of in an authorized landfill

SECTION 14: TRANSPORT INFORMATION

Labels Required:

Marine pollutant: no

Hazchem: none

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA/DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-CODE/GGVSEE): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15: REGULATORY INFORMATION

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

Manganese 2-methylcyclopentadienyl tricarbonyl (12108-13-3) is found on the following regulatory lists

“Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) schedule 6”, “Australia Inventory of chemical Substances AICS”, “Australian Standard for the Uniform Scheduling of Medicines and Poisons SUSMP schedule 7” “Fisher Transport Information”, “Sigma-Aldrich Transport Information”, “GESAMP/EHS Composite List – GESAMP Hazard profiles” ,”IMO IBC CODE CHAPTER 17: Summary of minimum requirements”, “OECD list of high production volume HPV Chemicals”, “Australia Hazardous Substances”, “Australia Exposure Standards”, “International Maritime Dangerous Goods Requirements IMDG Code- Substance Index”, “Regulations concerning the International Carriage of Dangerous Goods Code ADG Code – List of Emergency Action Codes”, “International Maritime Dangerous Goods Requirements IMDG Code”, “Australia Dangerous Goods Code ADG Code – Dangerous Goods list”, “Australia National Pollutant Inventory”, “Australia- Victoria Occupational Health and Safety Regulations – schedule 9: Materials at Major Hazard Facilities (And Their Threshold quantity) table 2”

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 Management. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposure Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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