Safety Info Sheet No.24
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NICNAS
Assessing chemicals for your protection

Methylcyclopentadienyl Manganese Tricarbonyl (MMT)

MMT is imported for use as a fuel additive. It is used as a lubricant to prevent automotive engine valve seat recession and also to increase fuel octane ratings. It is commonly blended into lead-replacement petrol and in aftermarket products that consumers add to automotive fuel.

NICNAS completed a full assessment of MMT as an anti-valve seat recession in June 2003. Here are the main findings of the report.

MMT can enter the body by being swallowed, breathed or through skin contact. Of these, skin contact is the most likely way for health effects to occur.

MMT causes mild skin and eye irritation.

MMT is highly toxic. Signs of MMT poisoning in the short term include giddiness, headache, nausea, chest tightness and breathing difficulties. Animal studies show that long-term exposure to MMT results in damage to the liver and kidneys. Accidental ingestion by a child of concentrated MMT in aftermarket fuel additives may be fatal.

ENVIRONMENT

MMT is highly toxic to aquatic animals. It should not be released into the stormwater, sewers or natural waterways. Waste contaminated with MMT must be disposed of by a licensed waste contractor.

RECOMMENDATIONS

Suppliers

- Material safety data sheets (MSDS) and labels should contain the correct hazard statements and signal words, risk and safety phrases and local supplier contact details including an emergency contact telephone number.

Formulators of Products

- Consumer products should be packaged with childproof closures;
- To prevent backflow and spillage, consumer products for addition to fuel tanks should be enclosed in containers with spouts of sufficient length to ensure adequate insertion of the spout into the fuel filler;
- Multiple use products should be packaged in containers with a measuring capacity or ideally with an automatic measuring and dispensing capacity. For such packaging, consideration of the light sensitivity of MMT is also required.

MMT is classified a Hazardous Substance.

The national occupational exposure standard for MMT (as manganese) has been set at 0.2 mg/m^3, as a time-weighted average concentration over 8 hours, with a notation indicating that significant absorption is possible via the skin.

MMT meets the criteria for a Dangerous Good, Class 6.1, Packing Group I. It is also recommended for listing under the Standard for the Uniform Scheduling of Drugs and Poisons.

More information on MMT can be found in the MSDS and in a Product Handling Guide available from a main supplier.

At the time of publication, the most comprehensive source of information is the full PEC assessment of MMT published by the National Industrial Chemicals Notification and Assessments Scheme (NICNAS). This is available free of charge from the NICNAS web site or by calling 1800 638 528. More information on the use of industrial chemicals can also be found at the NICNAS web site: www.nicnas.gov.au.