

**Material Safety Data Sheet**

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

1. NAME OF SUBSTANCE/PREPARATION AND COMPANY

Product details: Methylcyclopentadienyl Manganese Tricarbonyl, (62% MMT)
Trade name: TDS-1510 (62% MMT)

Manufacturer details:

TDS Chemical Corp., Ltd.

Plant: No.2 Waisha Industry Zone, Jiaojiang, Taizhou, Zhejiang 318000, China.

Tel: +86-21-6495 5601, 6495 5602, 6495 5603,

Fax: +86-21-6495 5604,

Telephone: (+86) 21 6495 5601 (Mon. – Fri. 09.00 am – 18.00 pm)

Telephone: (+86) 186-0177 9000 (outside office hours)

FOR CHEMICAL EMERGENCY DURING TRANSPORTATION

International emergency responses **1.352.323.3500** call INFOTRAC collect. These numbers are used for leaks, fires and medical emergencies involving human and animals. 24 Hrs. per day, 7 days per week

For domestic within the USA please use **1.800.535.5053**.

2. COMPOSITION / DETAILS OF CONSTITUENTS**Chemical name:**

Methylcyclopentadienyl Manganese Tricarbonyl, (62% MMT)

CAS No.

12108-13-3

Molecular Weight

218.10

Chemical Formula $C_9H_7MnO_3$

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3. STABILITY AND REACTIVITY:

Chemical Stability	Stable under normal temperatures and pressures
Conditions to Avoid	Incompatible materials
Incompatibilities with Other Materials	Oxidizing agents, halogens
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, oxides of manganese
Hazardous Polymerization	Will not occur

4. HAZARDS IDENTIFICATION

Emergency Overview Very toxic by inhalation, in contact with skin and if swallowed.

Potential Health Effects / Personal Protective Equipment

Eye	May cause eye irritation
Skin	May cause skin irritation. Toxic in contact with skin.
Ingestion	May cause irritation of the digestive tract. Poison by ingestion
Inhalation	May be fatal if inhaled. May cause respiratory tract irritation
Chronic	Not available

First Aid Measures

Eye	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin	Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion	Get medical aid immediately. Wash mouth out with water
Inhalation	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to physician	Treat symptomatically and supportively

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5. PHYSICAL AND CHEMICAL PROPERTIES:

Physical State	Liquid
Odor	Herbaceous odor
Color	0 Min.
Purity of MMT	≥ 62%
Mn. Content, Min wt %	≥ 15.1%
Solvent, % w/w	≤ 38.0%
Flash point (20°C)	42degree Celsius Min.
Freeze point	- 18 degree Celsius
V.P - 0.2 MMHG	at 20 degree Celsius
<u>SP.GR</u>	- 1.15 G/ M LTR
I.B.P (Initial boiling point)	- 150 degree Celsius
E.B.P	- 212 degree Celsius
Density (20°C, g/cm ³)	1.10 ~ 0.125 =1.0 water
Viscosity- 2.2 CST	at 20 degree Celsius
Viscosity- 3.5 CST	at 0 degree Celsius
Coefficient of Thermal Expansion	- 0.00099 GM/ML/C
Pour point °C (melt point)	- 1°C
Water content, %, w/w	0.007
Sediment content, %, w/w	0.05

6. FIRE FIGHTING MEASURES:

General Information	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/MIOSH (approved or equivalent),and full protective gear. Will burn if involved in a fire
Extinguishing Media	Use water spray, dry chemical, chemical foam, carbon dioxide, or chemical foam.

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7. EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls	Use adequate ventilation to keep airborne concentrations low. Personal Protective Equipment
Eyes	Wear chemical goggles
Skin	Wear appropriate protective gloves to prevent skin exposure.
Clothing	Wear appropriate protective clothing to prevent skin exposure.
Respirators	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Release Measure	
General Information	Use proper personal protective equipment as indicated above
Spills/Leaks	Absorb spill with inert material (e.g.) vermiculite, sand or earth) then place in suitable container.

8. HANDLING AND STORAGE:

Handling	Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood.
Storage	Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container

9. TOXICOLOGICAL INFORMATION:

RTECS#:	CAS# 12108-13-3: OP1450000
LD50/LC50:	CAS# 12108-13-3: Draize test, rabbit, skin: 100 mg/24H Mild; Inhalation, mouse: LC50 = 58600 ug/m ³ /4H; Inhalation, rat: LC50 = 76mg/m ³ /4H; Oral, mouse: LD50 = 34 mg/kg; Oral, rabbit: LD50 = 95mg/kg; Oral, rat: LD50 = 8 mg/kg; Skin, rabbit: LD50 = 140 mg/kg; Skin, rat: LD50 = 665 mg/kg.
ACGIH, IARC, NIOSH, NTP, or OSHA	Not listed

10. ECOLOGICAL INFORMATION:

Environmental Fate	Not available
Environmental Toxicity	No available

11. DISPOSAL CONSIDERATIONS:

Dispose of in a manner consistent with federal, state, and local regulations.

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12. TRANSPORT INFORMATION:**IATA**

Shipping Name	FLAMMABLE LIQUID, TOXIC, N.O.S. (contains Aromatic Hydrocarbons).
Hazard Class	3+6.1
UN Number	1992
Packing Group	II

IMO

Shipping Name	FLAMMABLE LIQUID, TOXIC, N.O.S. (contains Aromatic Hydrocarbons).
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RID/ADR

Shipping Name	FLAMMABLE LIQUID, TOXIC, N.O.S. (contains Aromatic Hydrocarbons).
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13. REGULATORY INFORMATION:**European Labeling in Accordance with EC Directives****Hazard Sybols** T+**Risk Phrases** R 24/25 Toxic in contact with skin and if swallowed. R 26 Very toxic by inhalation.

S 28A After contact with skin, wash immediately with plenty of water.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

Safety Phrases S 38 In case of insufficient ventilation, wear suitable respiratory equipment.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)**CAS# 12108-13-3:** No information available.**United Kingdom Occupational Exposure Limits****CAS# 12108-13-3:** OES-United Kingdom, TWA 0.1 mg/m³ TWA (as Mn)**CAS# 12108-13-3:** OES-United Kingdom, STEL 0.3 mg/m³ STEL (as Mn)**United Kingdom Maximum Exposure Limits****Canada** CAS# 12108-13-3 is listed on Canada's NDSL List.

CAS# 12108-13-3 is listed on Canada's Ingredient Disclosure List.

Exposure Limits CAS# 12108-13-3: OEL-AUSTRALIA:TWA 0.2 mg/m³;SkinOEL-BELGIUM:TWA 0.2 mg/m³;SkinOEL-DENMARK:TWA 0.1ppm (0.2 mg/m³);SkinOEL-FINLAND:TWA 0.2 mg/m³;STEL 0.6 mg/m³;SkinOEL-FRANCE:TWA 0.2 mg/m³;SkinOEL-SWITZERLAND:TWA 0.1 ppm (0.2 mg/m³);Skin JAN9OEL-UNITED KINGDOM:TWA 9.2 mg/m³;STEL 0.6 mg/m³;Skin

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH

TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL**TSCA** CAS# 12108-13-3 is listed on the TSCA inventory.

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14. OTHER INFORMATION

This data is based on our current level of knowledge but does not constitute an assurance of product properties and does not justify a contractual legal relationship. And the information above is believed to be accurate and represents the best information currently available to TDS Chemical Corp., Ltd. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

The product is only for commercial processing / use.

Further information:

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Department publishing:

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Safety department

Contacts

Mr. Quangen Zhou

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