

**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** $C_9H_7MnO_3$ 

(continue on page 2)



## Material Safety Data Sheet

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

Trade name: TDS-1510 (62% MMT)

### 3. STABILITY AND REACTIVITY:

<b>Chemical Stability</b>	Stable under normal temperatures and pressures
<b>Conditions to Avoid</b>	Incompatible materials
<b>Incompatibilities with Other Materials</b>	Oxidizing agents, halogens
<b>Hazardous Decomposition Products</b>	Carbon monoxide, carbon dioxide, oxides of manganese
<b>Hazardous Polymerization</b>	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**

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

#### **First Aid Measures**

<b>Eye</b>	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
<b>Skin</b>	Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
<b>Ingestion</b>	Get medical aid immediately. Wash mouth out with water
<b>Inhalation</b>	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.
<b>Notes to physician</b>	Treat symptomatically and supportively

(continue on page 3)



## Material Safety Data Sheet

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

Trade name: TDS-1510 (62% MMT)

5.

### PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Odor	Herbaceous odor
Color	Dark brown
Purity of MMT	62% $\geq$
Mn. Content, Min wt %	15.1%
Solvent, % w/w	38.0%
Flash point,	74.1 degree Celsius Min. / test environment condition 28°C / Relative humidity 58% / Atmospheric pressure 1005hkPa
Freeze point	-22 degree Celsius
V.P - 0.2 MMHG	at 20 degree Celsius
<u>SP.GR</u>	- 1.15 G/ M LTR
I.B.P	150 degree Celsius
E.B.P	212 degree Celsius
Density	1.10 ~1.20 =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	0.05
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.

(continue on page 4)



## Material Safety Data Sheet

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

Trade name: TDS-1510 (62% MMT)

### 7. EXPOSURE CONTROLS, PERSONAL PROTECTION

<b>Engineering Controls</b>	Use adequate ventilation to keep airborne concentrations low. Personal Protective Equipment
<b>Eyes</b>	Wear chemical goggles
<b>Skin</b>	Wear appropriate protective gloves to prevent skin exposure.
<b>Clothing</b>	Wear appropriate protective clothing to prevent skin exposure. 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.
<b>Respirators</b>	
<b>Release Measure</b>	
<b>General Information</b>	Use proper personal protective equipment as indicated above
<b>Spills/Leaks</b>	Absorb spill with inert material (e.g.) vermiculite, sand or earth) then place in suitable container.

### 8. HANDLING AND STORAGE:

<b>Handling</b>	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.
<b>Storage</b>	Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container

### 9. TOXICOLOGICAL INFORMATION:

<b>RTECS#:</b>	CAS# 12108-13-3: OP1450000
<b>LD50/LC50:</b>	CAS# 12108-13-3: Draize test, rabbit, skin: 100 mg/24H Mild; Inhalation, mouse: LC50 = 58600 ug/m <sup>3</sup> /4H; Inhalation, rat: LC50 = 76mg/m <sup>3</sup> /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.
<b>ACGIH, IARC, NIOSH, NTP, or OSHA</b>	Not listed

### 10. ECOLOGICAL INFORMATION:

<b>Environmental Fate</b>	Not available
<b>Environmental Toxicity</b>	No available

### 11. DISPOSAL CONSIDERATIONS:

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

(continue on page 5)

**Material Safety Data Sheet**

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

Trade name: TDS-1510 (62% MMT)

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).
Hazard Class	3+6.1
UN Number	1992
Packing Group	II

**RID/ADR**

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

(continue on page 6)

**Material Safety Data Sheet**

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

Trade name: TDS-1510 (62% MMT)

13. REGULATORY INFORMATION:**European Labeling in Accordance with EC Directives**

<b>Hazard Symbols</b>	T+
<b>Risk Phrases</b>	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.
<b>Safety Phrases</b>	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/m<sup>3</sup> TWA (as Mn)CAS# 12108-13-3: OES-United Kingdom, STEL 0.3 mg/m<sup>3</sup> 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/m<sup>3</sup>;Skin  
OEL-BELGIUM:TWA 0.2 mg/m<sup>3</sup>;Skin  
OEL-DENMARK:TWA 0.1ppm ( 0.2 mg/m<sup>3</sup>);Skin  
OEL-FINLAND:TWA 0.2 mg/m<sup>3</sup>;STEL 0.6 mg/m<sup>3</sup>;Skin  
OEL-FRANCE:TWA 0.2 mg/m<sup>3</sup>;Skin  
OEL-SWITZERLAND:TWA 0.1 ppm (0.2 mg/m<sup>3</sup>);Skin JAN9  
OEL-UNITED KINGDOM:TWA 9.2 mg/m<sup>3</sup>;STEL 0.6 mg/m<sup>3</sup>;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.

(continue on page 7)



## Material Safety Data Sheet

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 01 Dec. 2010

Trade name: TDS-1510 (62% MMT)

### 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:**

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,

#### **Department publishing:**

This data sheet

Safety department

Contacts

Mr. Quangen Zhou

### **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**.

MSDS Creation Date: 08 Jan. 2010 by TDS Chemical Corp., Ltd.