



Material Safety Data Sheet

In accordance with 91/155/EEC

Printed on: 08 Jan. 2010

Revised on: 18 Jan. 2010

1. NAME OF SUBSTANCE/PREPARATION AND COMPANY

Product details: Octane Booster

Trade name: Ferrocene

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,

Emergency telephone number:

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 to use **1.800.535.5053**.

2. COMPOSITION / DETAILS OF CONSTITUENTS

Chemical name:

Ferrocene

CAS No.

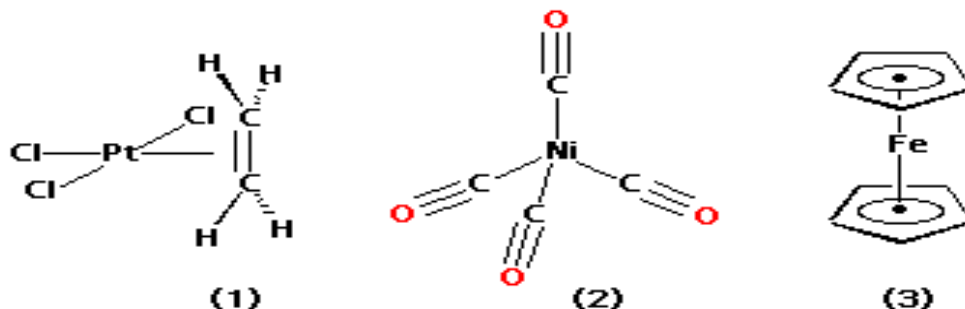
102-54-5

Molecular Weight

186.04

Chemical Formula

$\text{Fe}(\text{C}_5\text{H}_5)_2$



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Index value

Test Items	Unit	Standard
Content	% <input type="checkbox"/>	99.5 (HPLC)
Perceptible Content	% <input type="checkbox"/>	0.2
Melting Point	°C	172 ~ 174
Fe Content	ppm	100 max.
Organic Solvent Content	%	2.0
Appearance		Orange crystal
ACGIH		
10mg/m3	NIOSH	
	Total : 10mg/m3	OSHA - Final PELs
	TWA : respirable	
	Dust : 5mg/m3	
	TWA	
		Total dust : 15mg/m3 TWA;
		Respirable fraction : 5mg/m3 TWA;

3. STABILITY AND REACTIVITY:

Chemical Stability	Stable under normal temperatures and pressures.
Conditions to Avoid	Incompatible materials dust generation, excess heat, strong oxidants.
Incompatibilities with Other Materials	Strong oxidizing agents, Ammonium perchloride, tetranitromethane, mercury (III) nitrate.
Hazardous Decomposition Products	Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization	Has not been reported.

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4. HAZARDS IDENTIFICATION

Accidental Release Measures

General Information

Use proper personal protective equipment.

Emergency Overview

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Potential Health Effects / Personal Protective Equipment

Respiratory Protection

Use nosh approved respiratory mask

Notes to Physician

Treat symptomatically

Respirators

Follow the OSHA respirator regulations found in 29cfr 1910.134 or European Standard EN 140. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Eye

No adverse health effects expected, but material may cause mild irritatio. The toxicological properties of this material have not been fully investigated. And wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 cfr 1910.133 or European standard EN166.

Skin

May cause allergic reaction in sensitive individuals. The toxicological properties of this material have not been fully investigated

Ingestion

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Chronic

No information found

Clothing

Wear appropriate protective clothing to prevent skin exposure

Spills/Leaks

Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions.

Aggravation of Pre-existing Conditions

Persons with allergies or eczema may be more susceptible to the effects of the substance.

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First Aid Measures

Eye

If victim flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid

Skin

If victim flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation

If victim remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

5. PHYSICAL AND CHEMICAL PROPERTIES:

Physical State	Powder or Crystals
Appearance	Orange
Odor	Camphor
PH	Not available
Vapor Pressure	0.05 mbar @ 40
Vapor Density	Not available
Evaporation Rate	Not available
Viscosity	Not available
Boiling Point	249 deg C @ 760.00mm Hg
Melting Point	172.0-174.0 deg ^o C min.
Decomposition Temperature	465 deg ^o C
Solubility in water	Insoluble
Specific Gravity / Density	Not available
Molecular Formula	C ₁₀ H ₁₀ Fe
Molecular Weight	186.04

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6.	<p><u>FIRE AND EXPLOSION DATA:</u></p> <p>Auto ignition temperature 465°C min.</p> <p>General Information As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/MIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.</p> <p>Extinguishing Media In case of fire, use water spray, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam. Use agent most appropriate to extinguish fire.</p> <p>Flash Point Not available</p> <p>NFPA Rating Not published</p> <p>Explosion Limits, Lower Not available</p> <p>Upper Not available</p>
7.	<p><u>HANDLING AND STORAGE:</u></p> <p>Handling Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.</p> <p>Storage Keep container tightly closed. Store in a cool, dry, well-ventilated area away from moisture. Light sensitive. Handle in subdued light. Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.</p> <p>Special Precautions Keep containers closed when not in use.</p> <p>Engineering Controls Use adequate ventilation to keep airborne concentrations low. Personal Protective Equipment.</p> <p style="text-align: right;">(continue on page 6)</p>



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8.	<p><u>TOXICOLOGICAL INFORMATION:</u></p> <table> <tr> <td>Type of Test</td> <td>LD50 - Lethal dose, 50 percent kill</td> </tr> <tr> <td>Route of Exposure</td> <td>Intraperitoneal</td> </tr> <tr> <td>Species Observed</td> <td>Rodent - rat</td> </tr> <tr> <td>Dose / Duration</td> <td>500 mg/kg</td> </tr> <tr> <td>Toxic Effects</td> <td>Details of toxic effects not reported other than lethal dose value.</td> </tr> <tr> <td>Reference</td> <td>Progress Report for Purchase order.09876 from GOLD EAGLE CO. Chicago, USA. Submitted to the Institute of Chemical Biology, University of Shanghai, China. Volume(issue)/page/year:10/05/99</td> </tr> </table>	Type of Test	LD50 - Lethal dose, 50 percent kill	Route of Exposure	Intraperitoneal	Species Observed	Rodent - rat	Dose / Duration	500 mg/kg	Toxic Effects	Details of toxic effects not reported other than lethal dose value.	Reference	Progress Report for Purchase order.09876 from GOLD EAGLE CO. Chicago, USA. Submitted to the Institute of Chemical Biology, University of Shanghai, China. Volume(issue)/page/year:10/05/99
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Environmental Toxicity	No information found												
10.	<p><u>DISPOSAL CONSIDERATIONS:</u></p> <p>Dispose of in a manner consistent with federal, state, and local regulations.</p>												
11.	<p><u>TRANSPORT INFORMATION:</u></p> <table> <tr> <td>US DOT</td> <td>No information available</td> </tr> <tr> <td>Canadian TDG</td> <td>No information available</td> </tr> </table>	US DOT	No information available	Canadian TDG	No information available								
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12. **REGULATORY INFORMATION:**

US FEDERAL/ TSCA	CAS# 102-54-5 is listed on the TSCA inventory. Health & Safety Reporting List None of the chemicals are on the Health & Safety Reporting List. Chemical Test Rules None of the chemicals in this product are under a Chemical Test Rule. Section 12b None of the chemicals are listed under TSCA Section 12b. TSCA Significant New Use Rule None of the chemicals in this material have a SNUR under TSCA.
SARA	Section 302 (RQ) None of the chemicals in this material have an RQ. Section 302 (TPQ) None of the chemicals in this product have a TPQ. Section 313 No chemicals are reportable under Section 313.
Clean Air Act	This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.
Clean Water Act	None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA	None of the chemicals in this product are considered highly hazardous by OSHA.
STATE	Ferrocene can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, and Massachusetts. California No Significant Risk Level: None of the chemicals in this product are listed.
European/International Regulations	European Labeling in Accordance with EC Directives
Risk Phrases	R 22 Harmful if swallowed.
Exposure Limits	CAS# 102-54-5: OEL-AUSTRALIA:TWA 10 mg/m ³ OEL-BELGIUM:TWA 10 mg/m ³ OEL-FINLAND:TWA 10 mg/m ³ ;STEL 20 mg/m ³ ;Skin OEL-FRANCE:TWA 10 mg/m ³ OEL-THE NETHERLANDS:TWA 10 mg/m ³ OEL-SWITZERLAND:TWA 10 mg/m ³ OEL-UNITED KINGDOM:TWA 10 mg/m ³ ;STEL 20 mg/m ³ OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
Canada	CAS# 102-54-5 is listed on Canada's DSL List. This product has a WHMIS classification of D2B. CAS# 102-54-5 is listed on Canada's Ingredient Disclosure List.
Safety Phrases	WGK (Water Danger/Protection) CAS# 102-54-5: No information available. United Kingdom Occupational Exposure Limits CAS# 102-54-5: OES-United Kingdom, TWA 10 mg/m ³ TWA CAS# 102-54-5: OES-United Kingdom, STEL 20 mg/m ³ STEL

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13. OTHER INFORMATION:

Label Hazard Warning

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Label Precautions

None

Label First Aid

Not applicable

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

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