1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name: TSP-90 Heavy Duty Cleaner – White Granular Powder

Other Means of Identification
SDS #: RD-0009
UN/ID No: UN3253
Product Code: 0261 (1 lb bag), 0265 (4 lb bag)
Synonyms: Disodium trioxosilicate

Recommended Use of the Chemical and Restrictions on Use
Recommended Use: A heavy duty tri-sodium phosphate substitute cleaner – mix w/ water. Gloves required.
Uses Advised Against: Do not use on glass or wood surfaces.

Details of the Supplier of the Safety Data Sheet
Supplier Address:
Red Devil, Inc.
4175 Webb Street
Pryor, Oklahoma 74361
www.reddevil.com

Emergency Telephone Number
Company Phone Number: 918-825-5744
Fax: 918-825-5761
Emergency Telephone (24 hr):
INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 1 Sub-category C</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Signal Word
DANGER
Hazard Statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation

Appearance  White granular powder  Physical State  Granular  Odor  Odorless to slight musty odor

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Disodium trioxosilicate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>Na2SiO3*5H2O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium metasilicate pentahydrate</td>
<td>10213-79-3</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General Advice  Provide this SDS to medical personnel for treatment.
Eye Contact  Immediately flush w/ large quantities of water for @ least 15 minutes. Get medical attention immediately.

Skin Contact  In case of contact, immediately wash w/ soap & water for @ least 20 minutes while removing contaminated clothing & shoes. Get medical attention immediately. Wash clothing & clean shoes before reuse.

Inhalation  If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen & get medical attention immediately.

Ingestion  Do not induce vomiting, unless directed by medical personnel. Have victim rinse mouth thoroughly w/ water, if conscious. Never give anything by mouth to a victim who is unconscious. Contact a physician or poison control center immediately.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms  May cause irritation to the mucous membranes and upper respiratory tract. Swallowing may cause severe gastrointestinal irritation or burns with nausea, vomiting, and diarrhea. Causes severe skin burns and eye damage.

Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians  Treat symptomatically & supportively. Medical Conditions Aggravated By Exposure: Persons w/ pre-existing kidney disorders may also be more susceptible to the effects of this product.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media  Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media  Not determined.

Specific Hazards Arising from the Chemical  Product is not flammable. Unusual Fire Hazards: Product is corrosive & presents a severe inhalation & contact hazard to firefighters. When involved in a fire, material may decompose & produce corrosive &/or toxic gases. Contact w/ common metals may generate flammable hydrogen gas – dilution w/ water will release heat.

Hazardous Combustion Products  Toxic gases may be formed by fire.

Protective Equipment and Precautions for Firefighters  As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Unusual Fire Hazards: Product is corrosive & presents a severe inhalation & contact hazard to firefighters. When involved in a fire, material may decompose & produce corrosive &/or toxic gases. Contact w/ common metals may generate flammable hydrogen gas – dilution w/ water will release heat.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions  Wear protective clothing as described in Section 8 of this safety data sheet.

Methods and Material for Containment and Cleaning Up

Methods for Containment  Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up

Vacuum or sweep up material & place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. While handling product keep out of reach of children and pets. Wash face, hands, and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Use only in well-ventilated areas. Minimize dust generation and accumulation. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Close container after each use & keep tightly closed when not in use. To maximize shelf life, store @ temperatures below 26°C (80°F). Store locked up.

Incompatible Materials

Acids. Fluorine. Most common metals; see reactivity in this section.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium metasilicate pentahydrate</td>
<td>-</td>
<td>15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)</td>
<td>-</td>
</tr>
<tr>
<td>10213-79-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appropriate Engineering Controls

Engineering Controls

Facilities storing or utilizing this material should be equipped w/ eyewashes & safety showers. Use w/ adequate ventilation to keep airborne concentrations low & ensure exposure levels maintained below limits provided.

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye & face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and Body Protection


Body/Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respiratory Protection

Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. If necessary, refer to OSHA Technical Manual (Sec. VII: Personal Protective Equipment) or appropriate Standards of Canada. Use foot protection, as described in appropriate regulations & standards

Respiratory: If mists or sprays are created, use appropriate respiratory protection. Oxygen levels below 19.5% considered IDLH by OSHA. In such instances, use full-face piece pressure demand SCBA or a full face piece, supplied air respirator w/ auxiliary self-contained air supply.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.
9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Granular</td>
<td>Odor</td>
</tr>
<tr>
<td>Appearance</td>
<td>White granular powder</td>
<td>Odorless to slight musty odor</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td>Odor Threshold</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not determined</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>&gt;12.5 (1% solution)</td>
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</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>~ 72 °C / 161.6 °F</td>
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<tr>
<td>Boiling Point/Boiling Range</td>
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<tr>
<td>Flash Point</td>
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<tr>
<td>Evaporation Rate</td>
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<tr>
<td>Flammability (Solid, Gas)</td>
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<tr>
<td>Upper Flammability Limits</td>
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<tr>
<td>Lower Flammability Limit</td>
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<tr>
<td>Vapor Pressure</td>
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<td></td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Relative Density (Specific Gravity)</td>
<td>~1.75 @25°C (77°F)</td>
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<tr>
<td>Water Solubility</td>
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<tr>
<td>Solubility in Other Solvents</td>
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</tr>
<tr>
<td>Partition Coefficient</td>
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</tr>
<tr>
<td>Autoignition Temperature</td>
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<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
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<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
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<td></td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
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<td></td>
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<tr>
<td>Explosive Properties</td>
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<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
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<td></td>
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<tr>
<td>Molecular Weight</td>
<td>~212</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions. Flammable hydrogen gas may be produced on prolonged contact w/ materials such as aluminum, tin, lead & zinc.

Chemical Stability
Stable under recommended storage conditions. Stable under normal conditions. If exposed to moisture, material will cake.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Has not been reported.

Conditions to Avoid
Avoid generation of dust, high temperatures, moisture & incompatible materials.

Incompatible Materials
Acids, Fluorine. Most common metals; see reactivity in this section.

Hazardous Decomposition Products
Sodium oxide fumes. Sodium Metasilicate solutions, when heated or acidified, are hydrolyzed to free sodium ions & silicic acid.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Product Information

**Eye Contact**
Causes severe eye damage.

**Skin Contact**
Causes severe skin burns.

**Inhalation**
May cause irritation to the mucous membranes and upper respiratory tract.

**Ingestion**
Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts.

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium metasilicate pentahydrate</td>
<td>847 mg/Kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10213-79-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on Physical, Chemical and Toxicological Effects

**Symptoms**
Please see section 4 of this SDS for symptoms.

**Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure**

- **Germ Cell Mutagenicity**
  No information available.
- **Carcinogenicity**
  This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
- **Teratogenicity**
  No information available.
- **STOT - Single Exposure**
  May cause respiratory irritation.
- **Neurological Effects**
  Has not been identified.
- **Other Adverse Effects**
  Clinical studies on test animals exposed to relatively high doses of sodium metasilicate provided reproductive toxicity data. Persons w/ pre-existing kidney disorders may also be more susceptible to the effects of product.

Numerical Measures of Toxicity
Not determined

12. ECOLOGICAL INFORMATION

**Ecotoxicity**
PRACTICES SHOULD BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

General Product Information: Harmful to aquatic life in low concentrations. Sodium Metasilicate Pentahydrate is toxic to fish & marine organisms when applied to streams, rivers, ponds or lakes, however neutralization w/ dilute acid prior to release to aquatic environment to reduce alkalinity, renders it essentially non-toxic.

**Persistence and Degradability**

2. Environmental Fate: (Sodium Metasilicate) (Soluble): There is limited information available on the environmental fate & effects of material, if released to the environment. Sodium Metasilicate has exhibited moderate to high toxicity to aquatic organisms & moderate toxicity to terrestrial organisms. Sodium Metasilicate will persist in aquatic & terrestrial systems. Significant releases could have an adverse impact on the pH of an aquatic system. As alkalinity of material neutralizes, it will be reduced to silica. The solubility of silica is such that it will eventually be transported by ground waters.
Bioaccumulation
Not determined

Mobility
Not determined

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes
All wastes must be handled in accordance w/ local, state & federal regulations. Material can be converted to a less hazardous material by neutralization w/ dilute acid, if it complies w/ applicable regulations.
Any waste solution w/ a pH of 12.5 or above is a RCRA hazardous waste.

Contaminated Packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number
D002.

14. TRANSPORT INFORMATION

Note
Shipping Class information is intended as a guide to the overall classification of the product. Classification may be subject to change w/ changes in package size. Consult requirements under 49 CFR, IATA & IMDG for regulatory compliance, specifically related to Limited Quantity, Small Quantities and De minimis Exceptions. Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No
UN3253
Proper Shipping Name
Disodium trioxosilicate
Hazard Class
8
Packing Group
III
Reportable Quantity (RQ)
100 lbs
Special Provisions
IB8, IP3

IATA

UN/ID No
UN3253
Proper Shipping Name
Disodium trioxosilicate
Hazard Class
8
Packing Group
III
ERG Code
8L
Special Provisions
None

IMDG

UN/ID No
UN3253
Proper Shipping Name
Disodium trioxosilicate
Hazard Class
8
Packing Group
III
EmS-No
F-A, S-M
Special Provisions
None
15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Legend</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>United States Toxic Substances Control Act Section 8(b) Inventory</td>
</tr>
<tr>
<td>DSL/DSL</td>
<td>Canadian Domestic Substances List/Non-Domestic Substances List</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>ENCS</td>
<td>Japan Existing and New Chemical Substances</td>
</tr>
<tr>
<td>IECSC</td>
<td>China Inventory of Existing Chemical Substances</td>
</tr>
<tr>
<td>KECL</td>
<td>Korean Existing and Evaluated Chemical Substances</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippines Inventory of Chemicals and Chemical Substances</td>
</tr>
</tbody>
</table>

US Federal Regulations

SARA 311/312 Hazard Categories

- **Acute health hazard**: Yes
- **Chronic Health Hazard**: Yes

SARA 313
Not determined

US State Regulations

U.S. State Right-to-Know Regulations
Not Determined

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
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</thead>
<tbody>
<tr>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

Issue Date: 13-May-2013
Revision Date: 30-May-2013
Revision Note: New format

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet