Material Safety Data Sheet: 1.5% LANTHANATED TUNGSTEN ELC

Supercedes Date 01/06/2012
Issuing Date 08/14/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name 1.5% LANTHANATED TUNGSTEN ELC
Product Code PM046543
Recommended use Welding
Chemical nature Inorganic solid blend
Information on Manufacturer Partsmaster, Div of NCH Corp.
Emergency Telephone Number CHEMTREC® 800-424-9300
P.O. Box 655326
Dallas, TX 75265-5326

2. HAZARDS IDENTIFICATION

Emergency Overview
WARNING
Electric shock can kill
Arc Rays can injure and burn eyes and skin
May be harmful if inhaled
Keep out of reach of children

Color Gold
Physical State Solid
Odor No information available
Potential Health Effects

<table>
<thead>
<tr>
<th>Potential Health Effects</th>
<th>Physical State</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Inflammability</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Potential Environmental Effects

See Section 12 for additional Ecological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>7440-33-7</td>
<td>97-99</td>
</tr>
<tr>
<td>Lanthanum</td>
<td>1312-81-8</td>
<td>1-3</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.

Skin Contact
In case of contact, immediately flush skin with soap and plenty of water. If skin irritation persists, call a physician.

Inhalation
Remove person to fresh air. If signs/symptoms continue, get medical attention.

Ingestion
If swallowed, rinse mouth with water (only if the person is conscious). If swallowed, do not induce vomiting - seek medical advice. Never give anything by mouth to an unconscious person.

Notes to physician
Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flash Point
The product is not flammable

Autoignition Temperature
No information available.

Upper No data available
Lower No data available

Suitable Extinguishing Media
Carbon dioxide (CO2), Dry chemical. Foam. Water spray.

Specific hazards arising from the chemical
Arcs and sparks can ignite combustibles and flammable products. See American National Standard Z49.1; Safety in Welding and Cutting published by The American Welding Society.

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.

NFPA
Health 2
Flammability 0
Instability 0

HMIS
Health 2
Flammability 0
Instability 0
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Wear appropriate protective clothing. Avoid creating dusty conditions. Transfer solid into a properly labeled container for re-use or disposal. If necessary, wash area with water and pick up wash water for disposal.

Environmental Precautions
Prevent product from contaminating soil or from entering sewage, drainage systems, and bodies of water.

Methods for Containment
Pick up and arrange disposal without creating dust

Methods for Cleaning Up
Shovel or vacuum any spilled material into a suitable container. Alloy wastes are normally collected to recover metal value.

Neutralizing Agent
Not applicable.

7. HANDLING AND STORAGE

Handling
Do not eat, drink or smoke when using this product. Ensure adequate ventilation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place

Storage Temperature
Minimum 35 °F / 2 °C
Maximum 100 °F / 38 °C

Storage Conditions
Indoor X Outdoor
Heated Refrigerated

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>TWA: 5 mg/m³</td>
<td>No data available</td>
<td>STEL 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL: 10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lanthanum</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Engineering Measures
Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Eye/Face Protection
Wear a helmet or use face shield with filter lens of appropriate shade number (SEE ANSI/ASCZ49.1) provide protective screen and flash goggles, if necessary, to shield others. As a rule of thumb, start a shade that is too dark to see the weld zone. Then go next lighter shade which gives sufficient view of the weld zone.

Skin Protection
Welder’s leather gloves, Wear fire/flame resistant/retardant clothing.

Respiratory Protection
Use a NIOSH/MSHA approved or equivalent fume respirator or air supplied respirator when welding in confined spaces, or where local exhaust or ventilation does not keep exposure below TLV’s.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid</th>
<th>Viscosity</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Gold</td>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Appearance</td>
<td>Textured black paste</td>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>19.1</td>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Percent Volatile (Volume)</td>
<td>No information available</td>
<td>VOC Content (%)</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
<td>Vapor Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble</td>
<td>Melting Point/Range</td>
<td>6152 °F / 3400 °C</td>
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<tr>
<td>Boiling Point/Range</td>
<td>10652 °F / 5900 °C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions

Conditions to Avoid
None known

Incompatible Products
Strong acids. Incompatible with oxidizing agents.

Hazardous Decomposition Products
Fumes and gasses produced by welding, brazing and similar processes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, the procedures and the filler metal being used. Other conditions which also influence the composition and quantity of fumes and gases to which the worker may be exposed include: coatings on the metal being welded, the number of welders and the volume of the work space, the quality and amount of ventilation used, the position of the welder’s head in relation to the fume plume, as well as the presence of contaminants in the atmosphere when the filler metal is consumed. The fume and gas decomposition products generated are different in percent and form the product ingredients listed in Section III. The products formed in normal operation include those originating from the volatilization, reaction and oxidation of the filler metal.
the metal being welded, the coatings, etc. as noted above. One recommended way to determine the composition and quality of fumes and gases to which workers are exposed is to take an air sample inside the welders helmet if worn or in the workers breathing zone. See ANSI/AWS F1.1 "Method For Sampling Airborne Particles Generated By Welding And Allied Processes" available from the American Welding Society, P.O. Box 35140, Miami, FL 33135

Possibility of Hazardous Reactions

11. TOXICOLOGICAL INFORMATION

Product Information
No information available.

Component Information

Acute Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
<th>Draize Test</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
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<tr>
<td>Lanthanum</td>
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<td>no data available</td>
<td>no data available</td>
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</table>

Chronic Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Mutagenicity</th>
<th>Sensitization</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity</th>
<th>Target Organ Effects</th>
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</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>eyes, skin, respiratory system, blood</td>
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<tr>
<td>Lanthanum</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
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</tbody>
</table>

Carcinogenicity
There are no known carcinogenic chemicals in this product.

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
</tr>
<tr>
<td>Lanthanum</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Product Information
No information available.

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>N/A</td>
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<tr>
<td>Lanthanum</td>
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<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
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</tr>
</tbody>
</table>

Persistence and Degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal
Dispose of in accordance with local regulations.

Container Disposal
Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

ICAO
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

15. REGULATORY INFORMATION

Inventories
TSCA
Complies

DSL
Complies
U.S. Federal Regulations
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization

<table>
<thead>
<tr>
<th>Hazardous Categorization</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

CERCLA

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
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<td>Lanthanum</td>
<td>Not applicable</td>
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</tr>
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</table>

U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D2B Toxic materials

16. OTHER INFORMATION

Prepared By: Christopher Drogin
Supercedes Date: 01/06/2012
Issuing Date: 08/14/2013
Reason for Revision: No information available.
Glossary: No information available.
List of References: No information available.

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