MATERIAL SAFETY DATA SHEET
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 03-05-03

CHEMICAL IDENTITY

<table>
<thead>
<tr>
<th>LABEL IDENTITY</th>
<th>IRIDIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMICAL NAME/SYNONYMS</td>
<td>IRIDIUM</td>
</tr>
<tr>
<td>FORMULA</td>
<td>Ir</td>
</tr>
<tr>
<td>CHEMICAL FAMILY</td>
<td>METALLIC ELEMENT</td>
</tr>
<tr>
<td>CAS REGISTRY NUMBER</td>
<td>7439-88-5</td>
</tr>
<tr>
<td>HAZARDOUS INGREDIENTS</td>
<td>IRIDIUM METAL</td>
</tr>
<tr>
<td>%: 100</td>
<td>TLV: none established</td>
</tr>
<tr>
<td>OSHA/PEL: none established</td>
<td></td>
</tr>
</tbody>
</table>

PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>COLOR, FORM AND ODOR</th>
<th>Silvery white metal/wire, odorless</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILING POINT</td>
<td>4130° C</td>
</tr>
<tr>
<td>DENSITY (gm/cc)</td>
<td>NA</td>
</tr>
<tr>
<td>VAPOR PRESSURE @ 20°</td>
<td>NA</td>
</tr>
<tr>
<td>% VOLATILE BY VOLUME (%)</td>
<td>NA</td>
</tr>
<tr>
<td>REACTION WITH WATER</td>
<td>NA</td>
</tr>
<tr>
<td>EVAPORATION RATE (H2O=1)</td>
<td>NA</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>Insoluble</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>2410° C</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY (H2O=1)</td>
<td>22.65 at 20° C</td>
</tr>
</tbody>
</table>

FIRE AND EXPLOSION HAZARD DATA

<table>
<thead>
<tr>
<th>FLASH POINT</th>
<th>Not Determined</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOIGNITION TEMPERATURE (°C)</td>
<td>Not Determined</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>Non-flammable</td>
</tr>
<tr>
<td>EXTINGUISHING MEDIA</td>
<td>Dry Powder Do Not Use Water</td>
</tr>
<tr>
<td>SPECIAL FIRE FIGHTING PROCEDURES</td>
<td>Positive pressure, self-contained breathing apparatus. Wear full protective clothing.</td>
</tr>
<tr>
<td>UNUSUAL FIRE &amp; EXPLOSION HAZARDS</td>
<td>Dust, powder, and fume are flammable or explosive when exposed to heat or flame.</td>
</tr>
</tbody>
</table>
IRIDIUM
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HEALTH HAZARD INFORMATION

TOXICITY DATA
NA

HMIS RATING:
HEALTH: NA FLAMMABILITY: NA REACTIVITY: NA PERSONAL PROTECTION: NA

ROUTES OF ENTRY
INHALATION: ND SKIN: ND INGESTION: ND

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None Known

EFFECTS OF OVEREXPOSURE (acute and chronic): as solid no known effects

INHALATION
INGESTION
DERMAL/EYE

EMERGENCY FIRST AID PROCEDURES:

INGESTION
Procedures normally not needed. If large quantities are ingested, seek medical advice.

INHALATION
Not a hazard under normal use conditions. If exposed to excessive levels of dust or fumes, move to fresh air and seek medical attention.

SKIN CONTACT
Flush skin with large amounts of water. If irritation persists, get medical attention.

EYE CONTACT
In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

REACTIVITY DATA

STABILITY
Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY
NA

INCOMPATIBILITY (MATERIALS TO AVOID)
NA

HAZARDOUS DECOMPOSITION PRODUCTS
NA

HAZARDOUS POLYMERIZATION
Will Not Occur

CONDITIONS TO AVOID
NA
IRIDIUM
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SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Scoop up or vacuum into a container for reclamation or disposal.

WASTE DISPOSAL METHOD:
Keep container closed.
Avoid contact with heat, sparks, open flame and static discharge.
Store in a cool, dry location away from incompatible materials.
Avoid breathing any dust, mist or fumes resulting from the use of this product.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION
NIOSH approved respirator if ventilation is not adequate

LOCAL EXHAUST
Need during melting

MECHANICAL (general)
ND

SPECIAL
ND

OTHER
ND

PROTECTIVE GLOVES
Recommended during melting

EYE PROTECTION
During machine melting

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
Storage involves no hazard.

TRANSPORTATION REQUIREMENTS
DOT CLASS: Not Regulated
UN NUMBER: Not Regulated
IMCO CLASS: N. C.
OTHER: NA

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NA= NOT APPLICABLE  ND= NO DATA FOUND