I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product/Trade Name: LaserForm™ A6

Chemical Family: Metal Powder

Product Use: Material for SLS® (selective laser sintering) systems

II. COMPOSITION INFORMATION

<table>
<thead>
<tr>
<th>EC #</th>
<th>Component</th>
<th>Classification</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>231-157-5</td>
<td>Chromium (CAS# 7440-47-3)</td>
<td>Xi R36/37/38</td>
<td>&lt;1.81</td>
</tr>
<tr>
<td>231-111-4</td>
<td>Nickel (CAS# 7440-02-0)</td>
<td>Xn R40 R43</td>
<td>&lt;0.905</td>
</tr>
<tr>
<td>231-158-0</td>
<td>Cobalt (CAS# 7440-48-4)</td>
<td>Xn R42/43 R53</td>
<td>&lt;0.905</td>
</tr>
<tr>
<td>231-105-1</td>
<td>Manganese (CAS# 7439-96-5)</td>
<td></td>
<td>&lt;1.81</td>
</tr>
</tbody>
</table>

General Product Information

This preparation is classified as hazardous according to European Union Directives 67/548/EEC and 99/45/EC.

Xn R43

III. HAZARDS IDENTIFICATION

Emergency Overview

This preparation can cause an allergic skin reaction. Prolonged or multiple exposures can cause skin sensitisation. Can cause eye, skin, and respiratory tract irritation. Dusts or fume can cause respiratory system damage. The metal alloy contains a substance that can cause nervous system effects.

Potential Health Effects:

Eyes: This product can cause eye irritation. Symptoms include discomfort, itching and redness after contact.

Skin: This product can cause skin irritation. Symptoms include reversible redness, itching and/or pain.

Ingestion: Ingestion of large amounts can cause gastrointestinal irritation, vomiting, diarrhea and/or nausea.

Inhalation: This product can irritate the respiratory system. Symptoms include mild nasal and respiratory irritation, coughing, and difficulty breathing. Inhalation of fumes when the product is heated can cause metal fume fever with resulting flu-like symptoms.

Chronic: Prolonged or repeated inhalation of powder, dust or fumes can cause more severe irritation and possibly lung damage. Prolonged or repeated exposures to chromium dusts or fumes may cause perforation of the nasal septum, bloody nose and other symptoms of severe nasal irritation. Chronic exposure to very high concentrations of manganese dust has caused nervous system effects including muscle weakness, tremors, and behavioral changes. Epidemiological studies in humans have shown an association between lung and nasal cancers and prolonged occupational exposures to high concentrations of metallic nickel. While metallic nickel has been identified as a possible health hazard under extended exposure to large concentrations, the nickel in this product is in low concentration and is alloyed with other metals. The particles are also coated with a binder, further reducing the risk of exposure to nickel.
Medical Conditions Aggravated by Exposure
Could aggravate existing asthma, neurological conditions, emphysema, or other respiratory disease.

IV. FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin: Brush off powder using paper or textile towels. Wash affected area with mild soap and water. In case of dermatitis or if irritation persists, remove contaminated clothing and get medical attention. Wash contaminated clothing before reuse.

Ingestion: Not an expected route of entry. If large quantities of this material are ingested, affected person should drink 500 - 800 ml water, if possible with suspended activated carbon for medical use. Give water repeatedly. Get medical attention immediately. Artificial induction of vomiting should be restricted to first aid staff. Never give anything by mouth to an unconscious person.

Inhalation: If a problem develops, move affected person to fresh air, give artificial respiration if not breathing, and get medical attention immediately.

V. FIRE FIGHTING MEASURES

Flash Point: NA  Method Used: NA

Upper Flammable Limit (UFL): NA  Lower Flammable Limit (LFL): NA

Auto Ignition: NA  Rate of Burning: NA

General Fire Hazards: Dusts can form an explosive mixture with air.

Hazardous Combustion Products: Thermal decomposition products can include CO₂, CO, NOₓ, metal fumes, organo-metallic compounds, and smoke.

Extinguishing Media: Dry sand or an extinguisher approved for metal powder fires. Without disturbing the burning mass, smother the fire and allow the fire to burn itself out. DO NOT USE CO₂ extinguishers or water on metal powder fires.

Fire Fighting Equipment/Instructions: Wear full protective clothing, including helmet, self-contained positive-pressure or pressure-demand breathing apparatus, protective clothing and facemask. Move container from area if it can be done without risk. Do not use high-volume water jet or high-pressure inert gas. Avoid inhalation of material or combustion by-products. Dust accumulation from this product can present an explosion hazard in the presence of an ignition source.

VI. ACCIDENTAL RELEASE MEASURES

Containment Procedures: Stop the flow of material, if this is without risk. Ventilate contaminated area. Eliminate sources of ignition. Avoid the generation of dusts during clean up.

Clean-Up Procedures: Wear appropriate protective equipment and clothing, including a ground strap or conductive-soled shoes, during clean up. Vacuum the dry powder into a closed container with internally and externally explosion-proof vacuum equipment or use non-sparking tools to collect the material. Avoid the generation of dusts during clean-up. Avoid contact with water. Place material in an appropriate container for disposal.

Evacuation Procedures: Keep unnecessary personnel away.

Special Precautions: A substantial slipping hazard exists when these small spherical particles are spilled.

VII. HANDLING AND STORAGE

Handling Procedures: Avoid dust accumulation of this material to reduce potential explosion hazard. Use non-sparking tools when opening or closing containers. Use spark-proof, bonded, and grounded conveying and processing equipment to prevent static charge build-up. Keep this product from heat, sparks, or open flame.

Storage Procedures: Keep this material in a cool, dry, well-ventilated place. Avoid dust accumulation of this material. Eliminate all sources of ignition. Keep separate from incompatible materials.
### VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Guidelines

A: General Product Information:  Follow all applicable exposure limits.

B: Substance Exposure Limits:

<table>
<thead>
<tr>
<th>Substance</th>
<th>International OELs</th>
</tr>
</thead>
</table>
| Chromium  | Finland: 0.01 mg/m³  
            | Australia: 0.05 mg/m³  
            | Belgium, Denmark, France, Netherlands, Norway, Poland, Sweden, Japan, U.K (MEL): 0.5 mg/m³  
            | Philippines: 1 mg/m³ |
| Manganese | Canada  
            | Alberta (TWA): 1 mg/m³ (fume); Ceiling: 5 mg/m³  
            | Manitoba (TWA): 1 mg/m³ (fume); STEL: 3 mg/m³ (fume); Ceiling: 5 mg/m³ (dust)  
            | New Brunswick, Ontario (TWA): 1 mg/m³ (fume), 5 mg/m³ (dust); STEL: 3 mg/m³ (fume)  
            | Quebec (TWAEV): 1 mg/m³ (fume), 5 mg/m³ (dust)  
            | Saskatchewan (TWA): 5 mg/m³ (as Mn); 1 mg/m³ (TWA); STEL: 5 mg/m³ (elemental), 3 mg/m³ (fume)  
            | Yukon: Ceiling 5 mg/m³  
            | Belgium, Denmark, Finland, France, Switzerland, U.K. – 1 mg/m³  
            | Sweden – 2.5 mg/m³  
            | Germany (MAK) – 0.5 mg/m³ |
| Nickel    | Canada  
            | Alberta (TWA): 1 mg/m³ STEL: 1 mg/m³  
            | Manitoba, New Brunswick, Ontario (TWA): 1 mg/m³  
            | Quebec (TWAEV): 1 mg/m³  
            | British Columbia (TWA): 0.05 mg/m³; K1 (confirmed human carcinogen); sensitizer – reduce exposure to minimum possible level |

#### Engineering Controls

Use explosion-proof local exhaust ventilation. Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

#### PERSONAL PROTECTIVE EQUIPMENT

**Eyes/Face:**  Wear goggles.

**Skin:**  Use impervious gloves and apron.

**Respiratory:**  If ventilation cannot effectively keep dust concentrations below established limits, appropriate certified respiratory protection must be provided.

**General:**  An eye wash fountain is recommended.

### IX. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Silver/Gray Powder</td>
</tr>
<tr>
<td>Odor</td>
<td>Metallic</td>
</tr>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>PH</td>
<td>NA</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>NA</td>
</tr>
<tr>
<td>Vapour Density</td>
<td>NA</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>NA</td>
</tr>
<tr>
<td>Melting/Freezing Point</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility (H₂O)</td>
<td>Insoluble @ 20 °C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>NA</td>
</tr>
<tr>
<td>Percent Volatile</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>NA</td>
</tr>
</tbody>
</table>
X. CHEMICAL STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of handling, use and transportation.

Conditions to Avoid: Avoid dispersion of dust in air. Avoid ignition sources where dust is produced. Avoid contact with moist air or humid conditions.

Incompatibility: Oxidizing materials, strong acids and strong bases.

Hazardous Decomposition: Thermal decomposition products can include CO₂, CO, NOₓ, metal fumes, organo-metallic compounds, and smoke.

Hazardous Polymerization: Will not occur.

XI. TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

A: General Product Information: NA.

B: Component Analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>LD₅₀ Oral</th>
<th>LC₅₀ Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium</td>
<td>27.5 mg/Kg (rats)</td>
<td>86 mg/m³ (rats)</td>
</tr>
<tr>
<td>Manganese</td>
<td>9 g/Kg (rats)</td>
<td>no data</td>
</tr>
</tbody>
</table>

Chromium: In some workers, chromium compounds act as allergens and may cause dermatitis and/or pulmonary sensitisation. Chromic acid and chromates have a direct corrosive effect on the skin and the mucous membranes of the upper respiratory tract. Although rare, there may be the possibility of skin and pulmonary sensitisation.

Cobalt: Cobalt has been reported as causing hyper-sensitisation type dermatitis in individuals who are susceptible. Animal studies have shown that particulate cobalt is an acutely irritating substance and industrial exposures, possibly combined with small amounts of silica, are reported capable of producing serious pneumoconiosis.

Nickel: The most common ailment arising from contact with nickel or its compounds is an allergic dermatitis known as "nickel itch" which usually occurs when the skin is moist.

Since these substances are all part of a metal alloy, exposure to elemental metals is highly unlikely, and they are not expected to pose the afore mentioned health-hazards in this product.

Carcinogenicity

A: General Product Information: This product is not listed by IARC.

B: Component Analysis

Nickel: In laboratory animal studies, chronic exposure to high concentrations of metallic nickel has caused an increase in lung and nasal tumors. IARC has classified nickel as possibly carcinogenic to humans, group 2B. The National Toxicology Program (NTP) classifies metallic nickel as “Reasonably Anticipated to be a Human Carcinogen.” Nickel-containing alloys have not been listed by NTP as carcinogenic due to inadequacy of the data. The form of this product and the alloy structure make it highly unlikely that exposure to metallic nickel will occur.

Chromium: IARC has determined that there is sufficient evidence of increased lung cancer among workers in the chromate-producing industry and possible chromium alloy workers. This determination is supported by sufficient evidence for carcinogenicity to animals and possible mutagenicity testing of Cr VI compounds. The form of this product and the alloy structure make it highly unlikely that exposure to elemental chromium or Cr VI compounds will occur.

Neurological Effects

A: General Product Information: This product is not known or reported to cause neurological effects.

B: Component Analysis

Manganese: Chronic exposure to very high concentrations of manganese dust has caused nervous system effects including muscle weakness, tremors, and behavioral changes in humans. The form of this product and the alloy structure make it highly unlikely that exposure to metallic manganese will occur.
XII. ECOLOGICAL INFORMATION

Ecotoxicity
A: General Product Information: This product is not classified as dangerous to the environment.
B: Component Analysis - Ecotoxicity - Aquatic Toxicity: No ecotoxicity data are available for this product.
Mobility – No information available for product.
Persistence & Degradation – No information available for product.
Bioaccumulation – No information available for product.
Other Adverse Effects – No information available for product.
Environmental Fate: No information available for product.

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Instructions
Avoid disposal. Attempt to utilize preparation completely. Prior to disposal of unused preparation, consult an approved waste disposal operative to ensure regulatory compliance.

XIV. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>US DOT</th>
<th>RID/ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>IMO</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Regulated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

XV. REGULATORY INFORMATION

European Union Regulatory Information
General Product Information: This substance is not classified according to European Union Directive 67/548/EEC

<table>
<thead>
<tr>
<th>Xn</th>
<th>Harmful</th>
</tr>
</thead>
<tbody>
<tr>
<td>R43</td>
<td>May cause sensitisation by skin contact.</td>
</tr>
<tr>
<td>S22</td>
<td>Do not breathe dust.</td>
</tr>
<tr>
<td>S23</td>
<td>Do not breathe fumes.</td>
</tr>
<tr>
<td>S24/25</td>
<td>Avoid contact with skin and eyes.</td>
</tr>
<tr>
<td>S36/37</td>
<td>Wear suitable protective clothing and gloves.</td>
</tr>
</tbody>
</table>

Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component/CAS</th>
<th>EC #</th>
<th>EEC</th>
<th>CAN</th>
<th>TSCA</th>
<th>NLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium (CAS# 7440-47-3)</td>
<td>231-157-5</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Nickel (CAS# 7440-02-0)</td>
<td>231-111-4</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cobalt (CAS# 7440-48-4)</td>
<td>231-158-0</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Manganese (CAS# 7439-96-5)</td>
<td>231-105-1</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

XVI. ADDITIONAL INFORMATION

Full text of all Risk Phrases in Sections 2 & 3

<table>
<thead>
<tr>
<th>EC#</th>
<th>Component/CAS</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>231-157-5</td>
<td>Chromium (CAS# 7440-47-3)</td>
<td>Xi Irritant: Irritating to eyes, respiratory system and skin.</td>
</tr>
<tr>
<td>231-111-4</td>
<td>Nickel (CAS# 7440-02-0)</td>
<td>Xn Harmful: Limited evidence of a carcinogenic effect.</td>
</tr>
<tr>
<td>231-158-0</td>
<td>Cobalt (CAS# 7440-48-4)</td>
<td>Xn Harmful: May cause sensitisation by inhalation and skin contact.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R42/43 May cause long-term adverse effects in the aquatic environment.</td>
</tr>
</tbody>
</table>
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Key/Legend
ACGIH = American Conference of Governmental Industrial Hygienists
CAS = Chemical Abstracts Service
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CFR = Code of Federal Regulations
CPR = Controlled Products Regulations
DOT = Department of Transportation
DSL = Domestic Substances List
EINECS = European Inventory of Existing Commercial Chemical Substances
EPA = Environmental Protection Agency
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IDL = Ingredients Disclosure List

mg/Kg = milligrams per Kilogram
mg/L = milligrams per Liter
mg/m3 = milligrams per Cubic Meter
MSHA = Mine Safety and Health Administration
NA = Not Applicable or Not Available
NIOSH = National Institute for Occupational Safety and Health
NJTSR = New Jersey Trade Secret Registry
NTP = National Toxicology Program
OSHA = Occupational Safety and Health Administration
SARA = Superfund Amendments and Reauthorization Act
STEL = Short Term Exposure Limit
TDG = Transport Dangerous Goods
TSCA = Toxic Substances Control Act
WHMIS = Workplace Hazardous Materials Information System.