



Safety Data Sheet
According to Hazard Communication Standard 29 CFR 1910 (USA)
LaserForm® AISi7Mg0,6 Type A
Revision Date: November 24th, 2017

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: LaserForm® AISi7Mg0,6 Type A
Product type: Solid (Metal alloy powder)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses

For use with 3D Systems DMP (Direct Metal Printing) equipment.

Uses advised against

Any other uses.

1.3 Details of the supplier of the data sheet

3D Systems, Inc.
333 Three D Systems
Circle
Rock Hill, South Carolina
U.S.A.
Phone: 803.326.3900 or
Toll-free Phone:
800.793.3669
e-mail:
moreinfo@3dsystems.com

3D Systems Europe Ltd.
Mark House, Mark Road
Hemel Hempstead
Herts HP2 7
United Kingdom
Phone: +44 144-2282600
e-mail:
moreinfo@3dsystems.com

3D Systems / Australia
5 Lynch Street
Hawthorn, VIC 3122
+1 03 9819-4422
e-mail:
moreinfo@3dsystems.com

3D Systems Japan K.K.
Ebisu Garden Place Tower
27F
4-20-3, Ebisu, Shibuya-ku,
Tokyo 50-6027 Japan
Telephone No. +81-3-
5798-2500
e-mail:
moreinfo@3dsystems.com

1.4 Emergency telephone number:

USA
Chemical Emergency:
800.424.9300 – Chemtrec

Europe
Chemical Emergency:
+1 703.527.3887
Chemtrec

Australia
Chemical Emergency:
+(61) 29037.2994 – Aus
Chemtrec

Japan
Chemical Emergency
+(81)-345209637
Chemtrec

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

GHS product definition: Mixture

2.1.1 Classification

Regulation (EC) No. 1272/2008 [CLP/GHS]

No hazardous product as specified in EU-Directive 1272/2008

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

US Hazard Communication Standard 2012 (GHS)

Classified with an OSHA defined hazard: Combustible dust - May form combustible dust concentrations in air.

2.1.2 Additional Information

/

2.2 Label Elements

Hazard pictograms

/

signal word:

GHS-US: Warning

Hazard statements:

HUH210: Safety data sheet available on request

GHS-US: May form combustible dust concentrations in air.

GHS-US: The substance possibly demonstrates unusual reactivity with water under fire exposure conditions.

Precautionary statements:

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P223: Do not allow contact with water.

P260: Do not breathe dust.

P280: Wear protective gloves, clothing and eye protection.



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US Classification System.



NFPA Ratings
0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Hazardous Materials Identification System (HMIS):

(Degree of hazard: 0 = low, 4 = extreme):

Health **0**
Flammability **1**
Physical Hazards **1**

The substance possibly demonstrates unusual reactivity with water under fire exposure conditions. Risk of dust explosion.

2.3 Other Hazards which do not result in classification

Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

Danger of dust explosion: Dust clouds can be ignited and could pose an explosion risk in a confined space.

Reactivity: Can react with oxidizing agents and in alkaline solutions, causing hydrogen release. Hydrogen gas can ignite spontaneously due to exothermal nature of reaction. Can react violently with halogenated hydrocarbons.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical characterization:

Substance/mixture: Mixture

Chemical name	CAS-No	EC-No	%	Classification according to Reg. (EC) No. 1272/2008 and GHS-US
Aluminum	7429-90-5	231-072-3	>80	Flam. Sol.1, H228 Water react. 2, H261
Silicium	7440-21-3	231-130-8	1-12	Flam. Sol.2, H228

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

See section 16 for the full text of the H statements declared above.

There are no additional ingredients present which within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

- **Following eye contact:** Rinse gently but thoroughly, including under the eyelids, with water for at least 10 to 20 minutes. If symptoms persist consult doctor/ ophthalmologist.
- **Following inhalation:** Move the affected person away from the contaminated area and into the fresh air. Give artificial respiration if necessary. If you feel unwell, seek medical advice.
- **Following skin contact:** Generally the product does not irritate the skin. Wash off thoroughly with soap and water. If case of redness or irritation, call a doctor. Remove all contaminated clothing and footwear. Dispose or properly launder contaminated clothing before wearing again.
- **Following ingestion:** Wash out mouth thoroughly with water. Drink 1 to 2 glasses of water. DO NOT INDUCE VOMITING. Seek medical attention if irritation persists.
- **Protection of the first aider:** Put on appropriate protective equipment (see section 8).

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- **Eye contact:** Mechanical irritation. Dust may cause slight irritation to the ocular mucous membranes due to the presence of a foreign body.



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- **Inhalation:** May cause coughing, asthma symptoms or breathing difficulties if inhaled. Dust from this product may cause irritation to the respiratory tract.
- **Skin Contact:** Mechanical irritation.
- **Ingestion:** Mechanical irritation.

Over-exposure signs/symptoms

- **Eye contact:**
- **Inhalation:**
- **Skin contact:**
- **Ingestion:**

Long term exposure

- Potential immediate effects : Not available.
- Potential delayed effects : Not available.

4.3 Indications of any immediate medical attention and special treatment needed

- **Notes to physician:** Treat symptomatically.
- **Specific treatment:**

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

- **Suitable extinguishing media:** Use extinguishing type D powder, type D foam, dry salt, alumina or sand if available. Adapt extinguishing measures to surroundings.
- **Unsuitable extinguishing media:** Do not use water (explosion hazard), including high volume water jets, Carbon dioxide, Halon, foam and ABC powder.

5.2 Special hazards arising from the substance or mixture

- **Hazards from the substance or mixture:** The product itself is flammable. Increased fire hazard during dust formation. When dispersed in air the powder is susceptible to dust explosions. Contact with water releases flammable hydrogen gas.
- **Hazardous thermal decomposition products:** May release inert alumina dust.

5.3 Advise for firefighters:

- **Special protective actions for firefighters:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Contain the extinguishing fluids by bunding. Do not breathe fumes. Avoid raising powdered material due to explosion hazard.
- **Special protective equipment for firefighters:** Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Wear complete protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- **General measurers:** Avoid formation of dust due to explosion hazard.. Keep away from ignition sources. Keep unnecessary personnel away and contact emergency personnel. Wear appropriate protective equipment and clothing.
- **For non-emergency personnel:** Access forbidden to unauthorised personnel. Only qualified personnel equipped with suitable protective equipment may intervene. Avoid contact with skin and eyes. Do not breathe dust.
- **For emergency responders:** Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2 Environmental precautions

Do not allow product to spread into the environment. Do not discharge into drains or rivers.

6.3 Methods and material for containment and cleaning up

For containment: Use non-sparking antistatic tools and containers

For cleaning up small spillage: Use an explosion proof vacuum cleaner with equipment fitted with immersion filtration. Do not use water or aqueous cleansing agents for cleaning. Contact with water liberates flammable gases.

For cleaning up large spillage: Mechanically recover the product. Avoid dust production. Gather the product and place it in a spare container that has been suitably labeled. Dispose of materials or solid residues at an authorized site. Do not use water for cleaning. Any residues should be treated as small spillages.

Other information: Do not use compressed air. Prevent the formation of dust clouds.



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6.4 Reference to other sections

- See Section 1 for emergency contact information.
- See Section 7 for information on safe handling.
- See section 8 for information on appropriate personal protective equipment.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures:

- **Personel protection:** Work using a suitable extraction/ventilation system. Avoid contact with skin and eyes. Wear suitable antistatic garments and respiration protection.
- **Measures to prevent fire:** Any unavoidable deposit of dust must be regularly removed. Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces. Prevent the formation of dust clouds. Dust can combine with air to form an explosive mixture. Keep ignition sources away. Do not smoke. Protect against electrostatic charges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Use explosion-proof apparatus / fittings and spark-proof tools. Contact with water releases flammable gases.
- **Measures to protect the environment:** Use appropriate containment to avoid environmental hazard.

Advice on general occupational hygiene:

Do not drink, eat or smoke in the workplace. Avoid contact with skin and eyes. Do not breathe dust. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before reuse.

7.2 Conditions for safe storage

Local regulations should be followed regarding the storage of this material.

- **Technical measures and storage conditions:** Keep in a well-ventilated room. Keep container dry. Keep the container tightly closed. Keep away from sources of ignition. Avoid the proximity of flammable products (including wood, cardboard ...). Store away from incompatible materials such as water, acids, strong oxidizing agents, Bases, Alkaline earth metals, Alcohols and Metallic oxides.
- **Packaging materials:** Keep in the container supplied, or suitable metal, antistatic plastic or polythene container.
- **Requirements for storage rooms and vessels:** Containers should be stored in a fire proof cabinet or room in a clean, cool and dry environment.

7.3 Specific end use(s)

- **Recommendations:** Not available.
- **Industrial sector specific Solutions:** Not available.



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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values:

Aluminium	
Australia	English Safe Work Australia (Australia, 1/2014). TWA: 10 mg/m ³ 8 hours. Form: Dust TWA: 5 mg/m ³ , (as Al) 8 hours. Form: Welding fume I
Austria	German GKV_MAK (Österreich, 12/2011). MAK - Tagesmittelwert: 10 mg/m ³ 8 Stunden. Form: einatembare Fraktion MAK - Kurzzeitwerte: 20 mg/m ³ , 2 mal pro Schicht, 60 Minuten. Form: einatembare Fraktion MAK - Kurzzeitwerte: 10 mg/m ³ , 2 mal pro Schicht, 60 Minuten. Form: alveolengängiger Anteil MAK - Tagesmittelwert: 5 mg/m ³ 8 Stunden. Form: alveolengängiger Anteil
Belgium	Dutch Lijst Grenswaarden / Valeurs Limites (België, 4/2014). Grenswaarde: 1 mg/m ³ 8 uren. Vorm: inadembare fractie French Lijst Grenswaarden / Valeurs Limites (Belgique, 4/2014). Valeur limite: 1 mg/m ³ 8 heures. Forme: fraction alvéolaire German Lijst Grenswaarden / Valeurs Limites (Belgien, 4/2014). Mittelwert: 1 mg/m ³ 8 Stunden. Form: alveolengängige Fraktion
Brasil	Portuguese ACGIH TLV (Estados Unidos, 4/2014). TWA: 1 mg/m ³ 8 horas. Formulário: Fração respirável
Czech Republic	Czech MZCR PEL/NPK-P (Česká republika, 1/2013). PEL: 10 mg/m ³ 8 hodin. Skupenství: prach
Denmark	Danish Arbejdstilsynet (Danmark, 10/2012). Gennemsnitværdier: 5 mg/m ³ , (beregnet som Al) 8 timer. Form: røg Gennemsnitværdier: 2 mg/m ³ 8 timer. Form: respirabel Gennemsnitværdier: 5 mg/m ³ 8 timer. Form: total DK-Arbejdstilsynet (Danmark, 1997). GV: 10 mg/m ³ Form:
Finland	Finish Työterveyslaitos, Sosiaali- ja terveysministeriö (Suomi, 3/2014) HTP-arvot 8 h: 1.5 mg/m ³ , (laskettuna Al:nä) 8 tuntia. Olomuoto: aerosoli
France	French Ministère du travail (France, 7/2012). VME: 10 mg/m ³ 8 heures. VME: 5 mg/m ³ 8 heures. Forme: fumées VME: 5 mg/m ³ 8 heures. Forme: poudre
Germany	German TRGS900 AGW (Deutschland, 12/2014). Schichtmittelwert: 1.25 mg/m ³ 8 Stunden. Form: alveolengängige Fraktion Kurzzeitwert: 20 mg/m ³ 15 Minuten. Form: einatembare Fraktion Schichtmittelwert: 10 mg/m ³ 8 Stunden. Form: einatembare Fraktion
Hungary	Hungarian 25/2000. (IX. 30.) EüM-SzCsM együttes rendelet (Magyarország, 12/2011). AK: 6 mg/m ³ 8 óra. Forma: respirabilis frakció
Mexico	Spanish NOM-010-STPS (México, 9/2000). LMPE-PPT: 5 mg/m ³ 8 horas. LMPE-PPT: 5 mg/m ³ 8 horas. Estado: polvo



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Aluminium

Norway	Norwegian FOR-2011-12-06-1358 (Norge, 1/2013). Gjennomsnittsverdier: 5 mg/m ³ 8 timer. Form: pyroteknikk
Poland	Polish Rozporządzenie Ministra Pracy i Polityki Społecznej (Dz.U. 2014 poz. 817) (Polska, 6/2014). NDS: 2.5 mg/m ³ 8 godzin. Postać: frakcja wdychalna NDS: 1.2 mg/m ³ 8 godzin. Postać: frakcja respirabilna
Portugal	Portuguese Instituto Português da Qualidade (Portugal, 11/2014). VLE-MP: 1 mg/m ³ 8 horas. Formulário: poeiras VLE-MP: 5 mg/m ³ , (expresso em Al) 8 horas. Formulário: pós de pirólise
Spain	Spanish INSHT (España, 1/2014). VLA-ED: 10 mg/m ³ , (Al en polvo estabilizado) 8 horas. Forma: polvo VLA-ED: 5 mg/m ³ , (como Al) 8 horas. Forma: humos
Sweden	Swedish AFS 2011:18 (Sverige, 12/2011). NGV: 2 mg/m ³ , (som Al) 8 timmar. Form: respirabelt damm NGV: 5 mg/m ³ , (som Al) 8 timmar. Form: total damm
Switzerland	French SUVA (Suisse, 1/2014). VME: 10 mg/m ³ 8 heures. Forme: Poussières inhalables (poussières totales) VME: 3 mg/m ³ 8 heures. Forme: Poussière respirable (particules) German SUVA (Schweiz, 1/2014). MAK-Wert: 10 mg/m ³ 8 Stunden. Form: Einatembarer Staub (Gesamtstaub) MAK-Wert: 3 mg/m ³ 8 Stunden. Form: Alveolengängiger Staub (Feinstaub) Italian SUVA (Svizzera, 1/2014). TWA: 10 mg/m ³ 8 ore. Forma: Frazione inalabile TWA: 3 mg/m ³ 8 ore. Forma: Frazione respirabile
Turkey	Turkish NIOSH REL (Amerika Birleşik Devletleri, 10/2013) TWA: 5 mg/m ³ 10 saatler. Form: Solunabilir kısım TWA: 10 mg/m ³ 10 saatler. Form: Toplam
UK	English EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: inhalable dust TWA: 4 mg/m ³ 8 hours. Form: respirable dust
USA	English ACGIH TLV (United States, 4/2014). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ , (as Al) 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ , (as Al) 8 hours. Form: Total dust

Silicon

Australia	English Safe Work Australia (Australia, 1/2014). TWA: 10 mg/m ³ 8 hours.
Belgium	Dutch Lijst Grenswaarden / Valeurs Limites (België, 4/2014). Grenswaarde: 10 mg/m ³ 8 uren. French Lijst Grenswaarden / Valeurs Limites (Belgique, 4/2014). Valeur limite: 10 mg/m ³ 8 heures. German Lijst Grenswaarden / Valeurs Limites (Belgien, 4/2014). Mittelwert: 10 mg/m ³ 8 Stunden.



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Silicon	
Croatia	Croatian MinGoRP GVI/KGVI (Hrvatska, 6/2013). GVI: 4 mg/m ³ 8 sati. Oblik: respirabilna frakcija GVI: 10 mg/m ³ 8 sati. Oblik: ukupna prašina
Denmark	Danish Arbejdstilsynet (Danmark, 10/2012). Gennemsnitværdier: 10 mg/m ³ 8 timer DK-Arbejdstilsynet (Danmark, 1997). GV: 10 mg/m ³ Form:
France	French Ministère du travail (France, 7/2012). VME: 10 mg/m ³ 8 heures. Forme: poussière
Mexico	Spanish NOM-010-STPS (México, 9/2000). LMPE-CT: 20 mg/m ³ 15 minutos. LMPE-PPT: 10 mg/m ³ 8 horas.
Norway	Norwegian FOR-2011-12-06-1358 (Norge, 1/2013). Gjennomsnittsverdier: 10 mg/m ³ 8 timer
Switzerland	French SUVA (Suisse, 1/2014). VME: 10 mg/m ³ 8 heures. Forme: Poussières inhalables (poussières totales) German SUVA (Schweiz, 1/2014). MAK-Wert: 10 mg/m ³ 8 Stunden. Form: Einatembarer Staub (Gesamtstaub) MAK-Wert: 3 mg/m ³ 8 Stunden. Form: Alveolengängiger Staub (Feinstaub) Italian SUVA (Svizzera, 1/2014). TWA: 10 mg/m ³ 8 ore. Forma: Frazione inalabile TWA: 3 mg/m ³ 8 ore. Forma: Frazione respirabile
Turkey	Turkish NIOSH REL (Amerika Birleşik Devletleri, 10/2013) TWA: 5 mg/m ³ 10 saatler. Form: Solunabilir kısım TWA: 10 mg/m ³ 10 saatler. Form: Toplam
UK	English EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: inhalable dust TWA: 4 mg/m ³ 8 hours. Form: respirable dust
USA	English OSHA PEL (United States, 2/2013) TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust

Information on Monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Technical measures to prevent exposure

Ensure adequate ventilation to maintain exposures below occupational limits. Whenever possible the use of local exhaust explosion proof ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Do not blow dust off clothing or skin with compressed air.



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8.2.2 Personal Protection equipment

8.2.2.1 Hygiene measures

Do not use tobacco or food in work area. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2.2 Eye and face protection

Safety glasses or goggles are recommended when handling this material.

8.2.2.3 Skin protection

Hand Protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Rubber or other appropriate gloves should be worn to minimize contact. For hygienic reasons rubber gloves should not be worn for more than 2 hours.

Other skin protection

Use long sleeved antistatic garments and closed, antistatic safety shoes. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8.2.2.4 Respiratory protection

If ventilation cannot effectively keep dust concentrations below established limits, appropriate certified respiratory protection must be provided. Use a dust mask or filter apparatus of minimal level FFP1.



8.2.2 Environmental exposure control

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Do not allow product to enter drains. Do not flush into surface water. Do not let product contaminate subsoil.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance:

Physical state:	Powder
Colour:	Silver/Gray
Odour:	Odourless
pH (20 °C):	Not Applicable
Melting point/range (°C):	550 – 660 (1058 - 1220°F)
Boiling point/range (°C):	2467 (4472°F) (for pure Aluminium)
Flash point (°C):	No Data
Ignition temperature (°C):	>500 (>932°F)
Vapour pressure (°C):	No Data
Density (g/cm³):	2.5 - 2.7 (20.863 - 22.53 lbs/gal)
Bulk density (g/cm³):	0.7 – 1.5 (5.84 - 12.52 lbs/gal)
Water solubility (20°C in g/l):	Insoluble
Viscosity:	Not Applicable
Auto-ignition temperature (°C):	Product is not self-igniting
Minimum Ignition Energy (mJ):	10 – 100 mJ (for pure fine Aluminium powder)
Decomposition temperature:	No Data
Dust explosion hazard:	Fine dust clouds may form explosive mixtures with air
Lower explosion limit (g/m³):	30 – 170 () (for pure fine Aluminium powder)



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Upper explosion limit: No Data
Oxidising properties: No Data
Particle size: 100% <1mm

9.2 Other information

No additional information.

SECTION 10. STABILITY AND REACTIVITY

10.1 Chemical Stability: Stable under normal conditions and under recommended storage conditions. Aluminium and aluminium alloys may oxidize slowly when exposed to air.

10.2 Reactivity: Stable under normal conditions and under recommended storage conditions.

10.3 Possibility of hazardous reactions: Contact with water releases flammable gasses (hydrogen). Will react exothermally if mixed with strong oxidising substance and ignited. Susceptible to dust explosions.

10.4 Conditions to avoid: Prevent formation of dust clouds and accumulation of fines. Static electricity, heat or ignition source.

10.5 Incompatible materials: water, alcohols, amines, alkalis, oxidizing agents, strong acids and strong bases, halogenated hydrocarbons and other combustible materials.

10.6 Hazardous decomposition products: vapour, flammable gas (Hydrogen).

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Conclusion/Summary : Not Available

Aluminium (7429-96-5):

Route of Exposure	Measure	Value
Oral Inhalative	LD50	>2000 mg/kg (rat)
Oral Inhalative	LC50/4 h	>0.888 mg/l (rat)

Irritation/Corrosion

Conclusion/Summary : May be irritating to eyes, skin and respiratory system

Sensitisation

Conclusion/Summary : Not available

Mutagenicity

Conclusion/Summary : Not available

Carcinogenicity

Conclusion/Summary : Not available

US organization:

IARC (International Agency for Research on Cancer) : None of the ingredients is listed.

NTP (National Toxicology Program) : None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration) : None of the ingredients is listed.

Reproductive toxicity

Conclusion/Summary : Not available

Teratogenicity

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Conclusion/Summary : Not available

Specific target organ toxicity (repeated exposure):

Conclusion/Summary : Not available

Aluminium (7429-96-5):

Route of Exposure	Measure	Value
Oral Inhalative	NOAEC	10 mg/m ³ (rat)



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Aspiration hazard

Conclusion/Summary : Not available

11.2 Information on the likely routes of exposure

Inhalation, skin, eyes. Product as shipped does not present an inhalation hazard; however subsequent operations may create dusts or fumes which could be inhaled.

11.3 Symptoms related to the physical, chemical and toxicological characteristics

Adverse symptoms may include the following

Eye contact : Dust may cause slight irritation to the ocular mucous membranes due to mechanical action.

Inhalation : Coughing. Dust from this product may cause irritation to the respiratory tract.

11.4 Delayed and immediate after short- and long-term exposure

11.4.1 Short term exposure

Potential immediate effects : Not available

Potential delayed effects : Not available

11.4.2 Long term exposure

Potential immediate effects : Not available

Potential delayed effects : Not available

11.5 Potential acute and chronic health effects

11.5.1 Potential acute health effects

Eye contact : No known significant effects or critical hazards

Inhalation : No known significant effects or critical hazards

Skin contact : No known significant effects or critical hazards

Ingestion : No known significant effects or critical hazards

11.5.2 Potential chronic health effects

Conclusion/Summary : No known significant effects or critical hazards

General : No known significant effects or critical hazards

Carcinogenicity : No known significant effects or critical hazards

Mutagenicity : No known significant effects or critical hazards

Teratogenicity : No known significant effects or critical hazards

Developmental effects : No known significant effects or critical hazards

Fertility effects : No known significant effects or critical hazards

SECTION 12. Ecological information

Presents no particular risk to the environment, provided the disposal requirements (see section 13) and national or local regulations are complied with.

12.1 Toxicity

Long-term Ecotoxicity : No data available

12.2 Persistence and degradability

Abiotic Degradation : No data available

Physical-and photo-chemical elimination : No data available

Biodegradation : Not readily biodegradable.

12.3 Bioaccumulative potential

Bioconcentration factor (BCF) : No data available

12.4 Mobility in soil

Soil/water partition coefficient (Koc) : Not available

Mobility : Not available

General note: Do not allow product to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable

vPvB : Not applicable

12.6 Other adverse effects

Effect on global warming : No known significant effects or critical hazards

GWPmix comment : No known significant effects or critical hazards

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods



Safety Data Sheet
According to Hazard Communication Standard 29 CFR 1910 (USA)
LaserForm® AISi7Mg0,6 Type A
Revision Date: November 24th, 2017

13.1.1 Product

Methods of disposal

Do not contaminate sewers, drains, soil or surface waters with this material. Reduce waste by attempting to utilize product completely. Dispose of this container and its contents in accordance with all local, state, and federal regulations. Must not be disposed together with household garbage.

Hazardous waste

The classification of the product may meet the criteria for a hazardous waste.

13.1.2 Packaging

Methods of disposal

Consult local and national guidelines for the disposal of discarded packaging.

13.2 Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14. TRANSPORT INFORMATION

UN Number	This product was tested according to UN-Regulations of transportation of dangerous goods (Orange Book) and ADR-Regulations and was classified as harmless.
UN proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Packing group	Not applicable
Label	Not applicable
Environmental hazards	Not applicable
Special precautions for user	Prevent moisture and contact with water, heat sources and sources of ignition
Transport in bulk according to Annex II of MARPOL73/78 and the IPBC code	Not applicable

SECTION 15. REGULATORY INFORMATION

EU regulations

EINEC/ELINCS/NLP: All materials are listed
REACH Annex XVII: None listed
Other guidelines: Falls under the ATEX guidelines

US Federal Regulations

Aluminium alloy atomized granules

SARA Section 311/312 Hazard Classes: Physical hazard - Combustible dust

Aluminum (7429-90-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

Silicon (7440-21-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

NFPA rating

Health	:0 Minimal Hazard - No significant risk to health
Flammability	:1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200F. (Class IIIB)
Reactivity	:1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

US State Regulations

Aluminium alloy atomized granules

U.S. - California - Proposition 65 - Other information:

This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Australian regulations

SUSDP, Industrial Chemicals Act 1989:

Australian Inventory of Chemical Substances, AICS: Listed

Canada



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Aluminum (7429-90-5)

Listed on the Canadian DSL (Domestic Substances List)

Silicon (7440-21-3)

Listed on the Canadian DSL (Domestic Substances List)

SECTION 16. OTHER INFORMATION

Abbreviations and acronyms

CLP	= Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008]
EUH statement	= CLP-specific Hazard statement
ICAO	= International Civil Aviation Organisation
ADR:	= Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
GHS	= Globally Harmonised System of Classification and Labelling of Chemicals
CAS	= Chemical Abstracts Service (division of the American Chemical Society)
LC50	= Lethal concentration, 50 percent
LD50	= Lethal dose, 50 percent
PBT	= Persistent, Bioaccumulative and Toxic
vPvB	= very Persistent and very Bioaccumulative
STOT RE	= Specific target organ toxicity (repeated exposure)

Full text of abbreviated H statements

H228	: Flammable solid
H261	: In contact with water releases flammable gas

Relevant Precautionary statements (number and full text) referred to in sections 2 and 3 (according to (EC) No. 1272/2008):

- P202: Do not handle until all safety precautions have been read and understood.
- P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P223: Do not allow contact with water.
- P260: Do not breathe dust.
- P280: Wear protective gloves, clothing and eye protection.

SDS information

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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800.793.3669 (Toll-free in the US GMT-07:00; N. America, Mon – Fri, 6:00 a.m. to 6 p.m.)

803.326.3900 (Outside the U.S. GMT-07:00; N. America, Mon – Fri, 6:00 a.m. to 6 p.m.)

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