1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the substance or preparation: DuraForm AF+ and DuraForm ProX AF+

1.2 Use of the substance / preparation: For use with SLS (selective laser sintering) systems

1.3 Company/undertaking identification:

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
Chemical Emergency: 800.424.9300 - Chemtrec

3D Systems Europe Ltd.
Mark House, Mark Road
Hemel Hempstead
Herts HP2 7 United Kingdom
Phone: +44 144-2282600
e-mail: moreinfo@3dsystems.com
Chemical Emergency: +1 703.527.3887 - Chemtrec

3D Systems / Australia
5 Lynch Street
Hawthorn, VIC 3122
e-mail: moreinfo@3dsystems.com
Chemical Emergency:

2. HAZARDS IDENTIFICATION

2.1 Classification:

2.2 Label Elements
Regulation (EC) No, 1272/2008:
Hazard pictograms and signal word: None
Hazard statements: None

Precautionary statements:
P202: Do not handle until all safety precautions have been read and understood.
P307+313: If exposed: Get medical advice/attention
P404: Store in a closed container
P501: Dispose of contents/container in accordance with local regulation.

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 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Preparation related information
Description: Fibre/aluminum filled polymer powder. This substance is not classified according to European Union Directive 67/548/EEC.

3.2 Dangerous components:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>EC-No</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>7429-90-5</td>
<td>231-072-3</td>
<td>20-30</td>
<td>Flam. Sol.T, H228 F, R11, R15</td>
</tr>
</tbody>
</table>

Water react. 2, H261
4. FIRST AID MEASURES

4.1 In case of inhalation: In case of symptoms of irritation caused by vapors in thermal processing: provide fresh air, seek medical advice if necessary.

4.2 In case of skin contact: Flush skin with plenty of soap and water.

4.3 In case of eye contact: Flush eyes with plenty of water.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media: Water mist, dry chemical, carbon dioxide, or appropriate foam.

5.2 Extinguishing media which must not be used for safety reasons: High volume water jet.

5.3 Special hazards arising from the substance or mixture
Refer to 1995 edition of NFPA 33 Appendix A. The minimum explosive concentration of dust in the air is 30 grams per cubic meter. Dust control and good housekeeping are required. Dust may also carry a static charge. Make sure equipment and personnel are grounded to avoid static discharge.

5.4 Advice for firefighters
Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire will produce dense black smoke containing hazardous combustion products (see heading 10). Wear self-contained breathing apparatus for firefighting if necessary. Cool containers / tanks with water spray.

Minimum ignition energy: 5-20 mJ
Minimum explosible concentration (LEL): 20 - 70 g.m-3

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Exclude non-essential personnel. Remove all sources of ignition. Ensure adequate ventilation. Do not breathe dust.

6.2 Environmental precautions
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up
Use approved industrial vacuum cleaner for removal. Do not create a powder cloud by using a brush or compressed air.

6.4 Reference to other sections
See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Provide adequate ventilation. Keep container tightly closed. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin and eyes. When using, do not eat, drink or smoke. Store in original container. Avoid dust formation. Dust may form explosive mixture in air. Do not breathe dust.
7.2 Conditions for safe storage, including any incompatibilities
Containers which are opened must be carefully resealed and kept upright to prevent leakage. Take notice of the directions of use on the label. Keep in a dry, cool and well-ventilated place. Keep away from direct sunlight.

Storage temperature: 10 - 30 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values:
Occupational exposure limits: The OES for nuisance dust is 10 mg/m³ (total dust), 4 mg/m³ (respirable dust). Check local regulations in case different limits apply. During normal use, these concentrations are not expected to be reached.

8.2 Exposure controls
Technical measures to prevent exposure: Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If ventilation cannot effectively keep vapor concentrations below established limits, appropriate certified respiratory protection must be provided (e.g. 3M 6000 with organic vapor cartridge A2 or half mask 3M 4251).

Instructual measures to prevent exposure: When using, do not eat, drink or smoke. Wash hands after handling and before eating, smoking and using the lavatory and at the end of the day.

Personal protection equipment:
Hand protection: Use impervious nitrile gloves.
Eye protection: Wear safety glasses or chemical goggles.
Body protection: Wear as appropriate: Flame retardant antistatic protective clothing. Wear shoes with conductive soles.

Environmental exposure controls
The product should not be allowed to enter drains, water courses or the soil

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance:
Physical state: Powder
Color: grey
Odor: no distinct odor

9.2 Important health, safety and environmental information
pH (20 °C): NA
Melting point/range (°C): NA
Boiling point/range (°C): NA
Flash point (°C): 200°C(cc)
Ignition temperature (°C): NA
Minimum ignition energy: 5-20 mJ
Minimum explosible concentration LEL): 20-70 g/m³
Vapour pressure (°C): NA
Density (g/cm³): 1.3
Bulk density (kg/m³): NA
Water solubility (20 °C in g/l): NA
Viscosity, dynamic (mPa s): NA
10. STABILITY AND REACTIVITY

10.1 Conditions to avoid: Avoid wet/humid environment. Avoid dust formation.

10.2 Materials to avoid: Oxidizing materials, acids, strong bases, water, high humidity.

10.3 Hazardous decomposition products: Carbon dioxide, carbon monoxide, NOx can be released at high temperatures or upon burning.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution: NA

11.2 General remarks: Carcinogenicity: None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

12. Ecological information

12.1 Ecotoxicity: The aquatic toxicity of the product is unknown. No data are available for the components of this product.

12.2 Mobility: No information available for product.

12.3 Persistence and degradability: No information available for product.

12.4 Results of PBT assessment: No information available for product

12.5 Other adverse effects: No information available for product

13. DISPOSAL CONSIDERATIONS

Do not let product enter drains. Do not contaminate ponds, waterways or ditches with chemical or used container. Where possible recycling is preferred to disposal or incineration. Dispose of as special waste in compliance with local and national regulations.

European Waste Catalogue

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14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID/GGVSE): Not Regulated

Official transport designation:
Class:
Classification Code:
UN-No.:
Packing group:
Hazard label:
Tunnel restriction code:
Special provisions:
14.2 Sea transport (IMDG-Code/GGVSee): Not Regulated
Proper Shipping Name:
Class:
UN-No.:
Packing group:
EmS:
Marine Pollutant:
Special provisions:

14.3 Air transport (ICAO-IATA/DGR): Not Regulated
Proper Shipping Name:
Class:
UN-No.:
Packing group:
Special provisions:

15. REGULATORY INFORMATION

15.1 EU regulations
EINEC/ELINCS/NLP: All materials are listed
REACH Annex XVII: None listed

15.2 US FEDERAL
TSCA: All materials are listed on the TSCA Inventory and are not subject to TSCA requirements
SARA 302 EHS List (40 CFR 355 Appendix A): None listed
SARA 313 (40 CFR 372.65): None listed
CERCLA (40 CFR 302.4): None listed

15.3 Australian regulations
SUSDP, Industrial Chemicals Act 1989:
Australian Inventory of Chemical Substances, AICS: Listed

15.4 Japanese regulations
Chemical Risk Information platform (CHIRP): Listed
Industrial Health and Safety Law
Hazardous material: not applicable
Organic solvent poison prevention rule: not applicable
Ordinance on prevention of hazard due to specified chemical substances: not applicable
Lead Poisoning Prevention Rule: not applicable
Poison and Deleterious Substance Control law: not applicable
PRTR and Promotion of Chemical Management law (PRTR Law): no listed components
Management law (PRTR Law)
Fire Services Act: not applicable
Explosives Law: not applicable
High pressure gas safety law: not applicable
Export Trade Control Order: not applicable
Waste Disposal and Public Cleaning Law: applicable. Before disposal, consult an approved waste disposal operative to ensure regulatory compliance.
16. OTHER INFORMATION

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

Flam. Sol.1, H228: Flammable solid, category 1, H228: Flammable solid
Water react. 2, H261: Emission of flammable gases in contact with water, category 2, 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):

F: Highly Flammable
R11: Highly flammable
R15: Contact with water liberates extremely flammable gases

16.2 Further Information

SDS Creation Date: September 29, 2017
SDS Revision #: 00-A
SDS Revision Date: September 29, 2017
Reason for Revision: Creation

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