

Safety Data Sheet

according to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

DuraForm® AF+ DuraForm ProX™ AF+

Revision Date: September 29, 2017

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
+1 03 9819-4422
e-mail: moreinfo@3dsystems.com
Chemical Emergency:
+(61) 29037.2994 – Aus Chemtrec

2. HAZARDS IDENTIFICATION

2.1 Classification:

Not classified according to GHS, Regulation (EC) No. 1272/2008, 29 CFR 1910, Australian Dangerous Goods Code

2.2 Label Elements

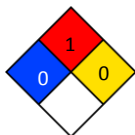
Regulation (EC) No, 1272/2008:

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:

Chemical name	CAS-No	EC-No	%	Classification	
				Regulation (EC) 1272/2008	Regulation 67/548/EEC, 1999/45/EC
Aluminum	7429-90-5	231-072-3	20-30	F R11, R15	Flam. Sol.1, H228 Water react. 2, H261

Safety Data Sheet

according to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

DuraForm® AF+ DuraForm ProX™ AF+

Revision Date: September 29, 2017

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

DuraForm® AF+ DuraForm ProX™ AF+

Revision Date: September 29, 2017

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/m ³
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

Safety Data Sheet

according to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

DuraForm® AF+ DuraForm ProX™ AF+

Revision Date: September 29, 2017

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

08 02 01

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:

Safety Data Sheet

according to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

DuraForm® AF+ DuraForm ProX™ AF+

Revision Date: September 29, 2017

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 (CHRIP):	Listed
Industrial Health and Safety Law	not applicable
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
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.

Safety Data Sheet
according to Regulation (EC) No 1907/2006 and 1272/2008,
Hazard Communication Standard 29 CFR 1910 (USA),
WHS Regulations Australia,
JIS Z 7253 (2012) Japan

DuraForm® AF+
DuraForm ProX™ AF+
Revision Date: September 29, 2017

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:
Reason for Revision: Creation

www.3dsystems.com

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.)

+44 144-2282600 (Europe GMT+01:00; Mon – Fri, 08:00 a.m. - 17:00 p.m. MEZ)

DISCLAIMER OF LIABILITY: The following supersedes any related provision in your company's forms, letters, and agreements from, by or with 3D Systems Corporation. 3D Systems, Inc. makes no warranty whether expressed or implied, including warranties of merchantability or of fitness for a particular purpose for this product. No statements or recommendations contained in the product literature are to be construed as inducements to infringe any relevant patent now or hereafter in existence. Under no circumstances shall 3D Systems, Inc. be liable for incidental, consequential, or other damages from alleged negligence, breach of warranty, strict liability or any other theory, arising out of the use or handling of this product. The sole liability of 3D Systems, Inc. for any claims arising out of the manufacture, use or sale of its products shall be for the buyer's purchase price.

The contents of this safety data sheet are subject to change without notice. 3D Systems, Inc. recommends that you periodically check www.3dsystems.com to make sure you are using the most current safety data sheet.

© Copyright 2017 by 3D Systems, Inc. All rights reserved. DuraForm is a registered trademark of 3D Systems, Inc. The 3D logo and ProX are trademarks of 3D Systems, Inc.