

## Safety Data Sheet

### DuraForm<sup>®</sup> Flex

Revision Date: August 19, 2021

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

##### 1.1 Identification of the substance or preparation: DuraForm Flex

**1.2 Use of the substance / preparation:** For use with SLS<sup>®</sup> (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

3D Systems Europe Ltd.  
200 Maylands Avenue  
Hemel Hempstead  
Herts, HP2 7TG United Kingdom  
Phone: +44 144-2282600  
e-mail: moreinfo@3dsystems.com

3D Systems Asia-Pacific  
30-32 Ceylon St  
Nunawading VIC 3131  
Australia  
+61 3 9819 4422  
e-mail: moreinfo@3dsystems.com

##### 1.4. Emergency telephone number:

U.S.A.:  
Chemical Emergency:  
800.424.9300 – Chemtrec

Europe:  
Chemical Emergency:  
+1 703.527.3887 - Chemtrec

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

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#### 2. HAZARDS IDENTIFICATION

##### 2.1 Classification

**GHS : Regulation (EC) No. 1272/2008, 29 CFR 1910:**

##### Physical Hazard:

None

##### Health Hazard:

None

##### Environmental Hazard:

None

##### 2.2 Label Elements

**Regulation (EC) No, 1272/2008:**

**Hazard pictograms and signal word:** None

**Hazard determining components of labelling:** None

**Hazard statements:** None

**Precautionary statements:**

**Prevention:** None

**Response:** None

**Storage:** None

**Disposal:** None

##### Supplemental information

##### Safety :

Avoid generating dust clouds.

Store in a closed container.

Dispose of contents/container in accordance with local regulation.

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#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

##### 3.1 Chemical characterization:

**Description:** Organic mixture

##### 3.2 Mixtures:

Chemical name	CAS-No	EC-No	%	Classification
				Regulation (EC) 1272/2008
Non-hazardous ingredients	NA	NA	100	Not classified

#### 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.

Following inhalation of product dust: Provide fresh air.

**4.2 In case of skin contact:** Flush skin with plenty of soap and water. Cool melted product on skin with plenty of water. Do not remove solidified product. In case of burns by molten product, medical treatment is necessary

**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. 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. Combustible. Large molten masses may ignite spontaneously in air. Water quenching is good practice. Minimize the generation and accumulation of dust. Failure or malfunction of temperature control systems on processing equipment, such as extruders, may create explosion hazards. Hazardous combustion products may include: (see also section 10)

**Hazardous decomposition products in a fire:** Tetrahydrofuran, Carbon dioxide, Carbon monoxide, Acetic acid, 2-Methylpropene, Acetaldehyde, Formic acid, Acrolein, Propionaldehyde

##### 5.4 Special protective equipment for fire-fighters:

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.

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#### 6.3 Methods and materials for containment and cleaning up

Use wet wipes to clean up smaller spills. For larger spills, use approved industrial vacuum cleaner is recommended. Do not create a powder cloud by using a brush or compressed air. (Example: Use of an X-839 Series ULPA Critical Filter Dry Canister Vacuum is recommended).

#### 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.

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## 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

Keep in a dry, cool and well-ventilated place. Keep away from direct sunlight. See section 5 for details.

**Storage temperature (°C):** 10 - 30

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### 8.1 Exposure limit values:

Occupational exposure limits: There are no PEL stabled for this product. Limit for nuisance dust is 10 mg/m<sup>3</sup> (total dust), 4 mg/m<sup>3</sup> (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. When ventilation is not adequate, use of a NIOSH approved N95 rated dusk mask is recommended (Example: 3M 8200, 3M8210,3M8110s).

**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 appropriate protective clothing and shoes (e.g., lab coat, sleeve protectors, smock, etc.).

#### Environmental exposure controls

The product should not be allowed to enter drains, watercourses or the soil.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	-
<b>Physical state</b>	Solid
<b>Form</b>	Powder
<b>Color</b>	White
<b>Odor</b>	No distinct odor
<b>Odor threshold</b>	Not available
<b>pH</b>	Not available
<b>Melting point/freezing point (°C)</b>	Not available
<b>Initial boiling point and boiling range (°C)</b>	Not available
<b>Flash point (°C)</b>	>200°C (closed cup)
<b>Evaporation rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Relative density (g/cm<sup>3</sup>)</b>	1.2
<b>Upper/lower flammability or explosive limits</b>	-
<b>Flammability limit - lower (%)</b>	Not available
<b>Flammability limit - upper (%)</b>	Not available
<b>Explosive limit - lower (%)</b>	Not available
<b>Explosive limit - upper (%)</b>	Not available
<b>Vapor pressure</b>	Not available
<b>Vapor density</b>	Not available
<b>Solubility(ies)</b>	-
<b>Solubility (water)</b>	insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available
<b>Decomposition temperature (°C)</b>	Not available
<b>Viscosity (cPs)</b>	Not available
<b>Other information</b>	-
<b>Oxidizing properties</b>	Not available
<b>Dust deflagration index Kst (bar.m/s)</b>	Not available
<b>VOC (g/L)</b>	Not available

#### 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, Tetrahydrofuran, Carbon dioxide, Carbon monoxide, Acetic acid, 2-Methylpropene, Acetaldehyde, Formic acid, Acrolein, Propionaldehyde

#### 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.

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#### 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:** PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

**12.5 Other adverse effects:** No information available for product

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#### 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

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#### 14. TRANSPORT INFORMATION

##### 14.1 DOT:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
Packing group: Not available  
Environmental Hazard:  
    Marine pollutant: no  
Special Precautions for user: None

##### 14.3 IATA:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
Packing group: Not available  
Environmental Hazard: No  
Special Precautions for user: Not Available

##### 14.2 IMDG:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
    Class: Not Available  
    Subsidiary risk: -  
Packing group: Not available  
Environmental Hazard:  
    Marine pollutant: No  
EmS: Not Available

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#### 14.1 ADR:

UN-No.: Not Regulated  
UN Proper Shipping Name:  
Transport hazard class(es)  
Class: Not Available  
Subsidiary risk: -  
Hazard No (ADR): Not available  
Tunnel restriction code : Not available  
Packing group: Not available  
Environmental Hazard: No  
Special Precautions for user: Not available

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#### 15. REGULATORY INFORMATION

##### 15.1. European Union Regulation:

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Persistent Organic Pollutants**

Not applicable

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not applicable

**Authorisations and/or restrictions on use:**

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

**Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended.**

Not listed

**National regulations:**

**German Water Hazard Class (WGK):** WGK1 (hazard to waters)

##### 15.2. Chemical safety assessment

**Chemical Safety Report** - No information available

##### 15.3 US FEDERAL

**TSCA:** All components listed on ACTIVE TSCA Inventory or exempt from listing.

**TSCA - 5(a) Significant New Use Rule List of Chemicals:** None

**US. Toxic Substances Control Act (TSCA) Section 12(b):** None

**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

**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

**California Prop. 65 Components:** Does not contain listed ingredients

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#### 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.

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#### 16. OTHER INFORMATION

SDS Creation Date: ..... January 20, 2005

SDS Revision #: ..... 03-A

SDS Revision Date: ..... August 19, 2021

Reason for Revision: ..... Update header and all sections.

[www.3dsystems.com](http://www.3dsystems.com)

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