MATERIAL SAFETY DATA SHEET **FLEXA BLACK**	**SINTERIT SP. Z O.O.** **Date of creation: 12 May 2016** **Date of current version: 30 November 2018**

SECTION 1. MIXTURE / SUBSTANCE IDENTIFICATION AND COMPANY IDENTIFICATION

1.1. Product identification

Product name: FLEXA BLACK
Product code:

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

Identified uses of substance/mixture: Powder material for Selective Laser Sintering (SLS) process

1.3. Details of the provider of material safety data sheet

Distributor
Sinterit Sp. z o.o.
30-504 Kraków ul. Kalwaryjska 69/9 Poland
+48 570 967 854
contact@sinterit.com

Person responsible for Material Safety Data Sheet:
contact@sinterit.com

1.4. Emergency number

112 (EU international emergency number) or +48 570 967 860 (Sinterit support).
Polish National Toxicological Consultant: +48 607218174

SECTION 2. HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

This product does not meet the classification and labelling criteria given in the Regulation (EC) No 1272/2008 (CLP).

2.2. Label elements

Not relevant.

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3. INFORMATION ON COMPOSITION INGREDIENTS

3.1. Substances

Thermoplastic polyurethane (TPU), carbon-based powder

3.2. Mixtures

No hazardous ingredients present in the product's mixture.

SECTION 4. FIRST AID MEASURES

4.1. Emergency procedure:

If inhaled:
Remove affected person from the exposure of substance.
Evacuate to supply of fresh air.
If symptoms persist, call a physician.
In case of skin contact:
Do NOT use solvents or thinners. Wash off with soap and water.
If symptoms persist, call a physician.
Cool melted product on skin with plenty of water. Do not remove solidified product. In case of burns apply cold water until pain subsides then seek medical advice.
In case of eye contact:
If worn, remove contact lenses or glasses. Rinse eye(s) thoroughly under running water keeping eyelids wide open (at least 10 minutes). Seek medical assistance.
If swallowed:
Do not induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Call a doctor.

4.2. Most important symptoms and effects, both acute and delayed.

No data available.

4.3. Indication of any immediate medical attention and special treatment needed.

No data available.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media High power water jet.

5.2. Special hazards arising from the substance or mixture

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Do not use a solid water stream as it may scatter and spread fire.
Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.

Hazardous combustion products:
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Nitroxides.

5.3. Advice for firefighters

Special protective equipment for firefighters:
Exposure to decomposition products may be a hazard to health. In the event of fire, wear self-contained breathing apparatus.

Further information:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers.
In the event of fire and/or explosion do not breathe fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures Personal precautions:
Ensure adequate ventilation.
Use personal protective equipment. Avoid dust formation.
Avoid contact with skin, eyes and clothing. Avoid breathing dust.
Avoid inhalation of vapour or mist.
Contaminated surfaces will be slippery.
Treat recovered material as described in the section "Disposal considerations".

6.2. Environmental precautions Environmental precautions:
Should not be released into the environment.
Do not allow contact with soil, surface or groundwater.
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

6.3. Methods for containment and cleaning up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Avoid dust formation.

6.4. Reference to other sections
If appropriate Sections 8 (personal protection) and 13 (disposal consideration) shall be referred to.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling:
Provide appropriate exhaust ventilation and dust collection at machinery.
The material can accumulate static charge and can therefore cause electrical ignition. Minimize dust generation and accumulation.
Dust must be collected and disposed of carefully. Wear personal protective equipment.
Do not breathe vapours or dust.

Advice on protection against fire and explosion:
Take measures to prevent the buildup of electrostatic charge. During processing, dust may form explosive mixture in air. Keep away from heat and sources of ignition. Normal measures for preventive fire protection.

Hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing. Keep away from food and drink. General industrial hygiene practice. When using do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Further information on storage conditions:
Keep away from heat and sources of ignition. Keep away from direct sunlight. Protect from Moisture.

Advice on common storage:
Keep away from food and drink.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION.

8.1. Control parameters.

Ventilation
Temperature
Humidity

8.2. Exposure controls/personal protection

Permissible exposure limit (PEL) values:

ACGIH Limit (total inhalable dust):
TWA: 10 mg/m^3

ACGIH Limit (respirable dust):
TWA: 3 mg/m^3

Engineering measures:
Provide sufficient air exchange and/or exhaust in work rooms.
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.
Apply measures to prevent dust explosions.

Personal protective equipment

Eye protection:
Safety glasses with side-shields.

Hand protection:
Protective gloves (EN 374).

Remarks:
The suitability for a specific workplace should be discussed with the producers of the protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use.
The exact break through time can be obtained from the protective glove producer and this has to be observed.
The breakthrough time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.
Request information on glove permeation properties from the glove supplier.
Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work.

Skin and body protection:
Safety shoes.
Wear suitable protective clothing.

Respiratory protection:
When a person is exposed to a concentration above the occupational exposure limit a usage of a certified respiratory mask is necessary (particle filter EN 143 P2 or FFP2).

In the case of vapour formation use a respirator with an approved filter mentioned above.

Protective measures:
Follow the skin protection plan.

SECTION 9. PHYSICAL AND CHEMICAL CHARACTERISTICS.

9.1. Information on basic physical and chemical properties

Appearance: granular, fine powder
Colour: black
Odour: non-significant
pH: not determined
Melting point/range: 160°C

Softening point: 82.3°C
Flammability (solid): non-flammable
Lower explosion limit: the product is not explosive at itself, but it may form explosive dust
Vapour pressure: not determined.
Powder density: 1,22 - 1,32 g/cm^3
Average granulation: 50 µm
Water solubility: non-soluble
Solubility in other solvents: not determined
Ignition temperature: not determined

9.2. Other information

Not relevant.

SECTION 10. STABILITY AND REACTIVITY.

10.1. Reactivity

No decomposition if stored and applied as directed**.**

10.2. Chemical stability

The product is chemically stable.

10.3. Possibility of hazardous reactions

Hazardous reactions:
Finely dispersed particles form explosive mixtures with air. Burning produces noxious and toxic fumes.

10.4. Conditions to avoid

Conditions to avoid:
Keep away from heat and sources of ignition. Avoid dust formation. Avoid moisture.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11. TOXICOLOGICAL INFORMATION.

11.1. Information on toxicological effects

Acute oral toxicity: No data available.
Acute inhalation toxicity: No data available.

Acute dermal toxicity: No data available.
Skin corrosion/irritation product: May cause irritation of respiratory tract. No known irritant effect.
Serious eye damage/eye irritation product:
Dust contact with the eyes can lead to mechanical irritation. Respiratory or skin sensitisation.
Genotoxicity in vitro: No data available.
Carcinogenicity Product: This information is not available.
Effects on fertility: This information is not available.

SECTION 12. ECOLOGICAL INFORMATION.

12.1. Toxicity

Toxicity to fish: no data available.
Toxicity to daphnia and other aquatic invertebrates: no data available.
Toxicity to algae: no data available.
Toxicity to microorganisms: no data available.

12.2. Persistence and degradability

Biodegradability: no data available

12.3. Bioaccumulative potential

Bioaccumulation: no data available.
Partition coefficient: n-octanol/water: no data available.

12.4. Mobility in soil

Product mobility: no data available.

12.6. Other adverse effects

Additional ecological information:
Should not be released into the environment.

SECTION 13. DISPOSAL CONSIDERATIONS.

13.1. Waste treatment methods

Dispose of in accordance with the European Directives on waste and hazardous waste. In accordance with local and national regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Contaminated packaging:
Dispose of in accordance with local regulations. Dispose of as unused product.

SECTION 14. INFORMATION ON TRANSPORTATION.

14.1. UN number

Not regulated as a dangerous good.

14.2. UN proper shipping name

Not regulated as a dangerous good.

14.3. Transport hazard class(es)

Not regulated as a dangerous good.

14.4. Packing group

Not regulated as a dangerous good.

14.5. Environmental hazards

Not regulated as a dangerous good.

14.6. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15. REGULATORY INFORMATION.

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

Regulation (EC) No 1907/2006 (REACH) annex XIV (List of substances subject to authorisation)

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident involving dangerous substances

This product is not subject to Part 1 or 2 of Annex I. Regulation of Minister of Health dated December 30, 2004 on safety, hygiene and health for chemical agents at work (Dz. U. 05. 11. 86. with later amendments). The Waste Management

Act of 14 December 2012 (Dz. U. 2013 nr 0 pos. 21. with later amendments).
Regulation of the ministry of environment on the catalogue of waste. (Dz. U. 2014, pos. 1923.). Act of 13 June 2013 of management of packaging and packaging waste (Dz. U. 2013. 888). Directives 2000/39/EC, 2006/15/EC i 2009/161/EC of establishing a first, second and third list of indicative occupational exposure limit values.

15.2. Chemical Safety Assessment

Chemical Safety Assessment - product components - Not applicable.

SECTION 16. OTHER INFORMATION

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case. EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU National Threshold Limit Values of the corresponding countries as amended in each case. Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of other abbreviations:
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways;
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian

This information is based on our present state of knowledge and experience.
The security data sheet describes products with a view to the security requirements. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.