Material Safety Data Sheet

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

1.1 PRODUCT IDENTIFIER:

@ COMMERCIAL NAME: This safety data sheet can refer to:
Mater-Bi® SE51F0
Mater-Bi® SE51F2
Mater-Bi® SE52F0
Mater-Bi® SE52F2

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

@ IDENTIFIED USES: not dangerous thermoplastic polymeric pellets for industrial use (extrusion and thermoforming).
USES ADVISED AGAINST: do not use for processes not intended for thermoplastic polymers and for any manipulation not reported in the technical data sheet of the product.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

SUPPLIER: **Novamont S.p.A.**
ADDRESS: Via G. Fauser, 8 I-28100 Novara, Italy
TELEPHONE: +39.0321.699611
FAX: +39.0321.699601
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1.4 EMERGENCY TELEPHONE NUMBER: Tel. +39 0321.699611 (availability h 9.00-18.00)

SECTION 2: HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

Classification according to Reg. (EC) 1272/2008:
Not classified

2.2 LABEL ELEMENTS:

Hazard pictograms:
none
Signal word:
none
Hazard statements:
none
Precautionary statements:
none

@ 2.3 OTHER HAZARDS:

The product does not contain components that meet the criteria as a PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) in concentration ≥ 0,1%.
The material as supplied does not pose any dust explosion hazard because it contains essentially no dust particles in size range to support dust explosion. If the material is grinded into powder, then could pose dust explosion hazard.
Contact with molten material may cause burns and abrasions to skin and eyes' damage.
During processing of material could be released fumes and vapors that in large amount may cause skin, eye and respiratory irritation.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

@ 3.2 MIXTURES:	Mixture of thermoplastic polymers and additives

SECTION 4: FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

EYE CONTACT:	Rinse eyes with fresh water for few minutes to remove any residual product. In case of contact with molten material, flush eyes with water for at least 15 minutes and seek for medical attention. Do not try to remove adherent material from eyes.
SKIN CONTACT:	Adverse effects are not expected after skin contact with solid pellets. Skin contact with molten material may cause burns and abrasions. In these cases, there is first of all the need to put the burned part in contact with cold water at least for five minutes. Do not try to remove the material from the skin. Regardless of the severity of the injury, it is necessary to get medical attention.
INGESTION:	Remove any residual product and rinse mouth. Do not give anything to the victim if unconscious. If large quantities are swallowed seek for medical attention. Induce vomiting only upon medical consent.
INHALATION:	In case of exposure to dust or fumes or vapors derived from the processing, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects arise.
PERSONAL PROTECTIVE EQUIPMENT FOR FIRST AID RESPONDERS:	Wear appropriate personal protection to avoid contact with the material. Avoid inhalation of dust or fumes and vapors that are possibly derived from the processing of the product. Refer to Section 8.
4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:	Not known significant effects on human health arising from the product as supplied. The possibility of effects is essentially related to the contact with the material in the molten state (burns in case of contact with eyes / skin) and to the exposure to fumes and vapors that may be released during processing with a possible irritant effect on skin, eyes and respiratory system.
4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:	Treat according to symptoms. No known specific remedies. There are no information justifying the need for clinical monitoring following exposure to the product as supplied.

SECTION 5: FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

SUITABLE EXTINGUISHING MEDIA: dry chemical, foam, water spray.
UNSUITABLE EXTINGUISHING MEDIA: CO_2 is not suitable for solids

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:	The material is not classified as flammable. During its combustion, toxic gases such as carbon oxides may be released. Wear appropriate protective equipment accordingly. Mechanical handling operations can generate dust characterized by size that could support explosion hazard. Avoid the accumulation of dust to reduce the risk of explosion.
5.3 ADVICE FOR FIREFIGHTERS:	Dry chemical, foam and water spray may be used for fire extinguishment. Surroundings exposed to intense heat deriving from fire area should be kept cool with water jets to prevent fire spreading. Remove combustible materials from affected area if possible. Wear full face mask and a positive pressure self-contained breathing apparatus and

full protective clothing equipment during fire-fighting operations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

- For non-emergency personnel.
Material can make the surface slippery: pay attention to it. Block the leaks if the operation does not pose any risk. Remove possible sources of ignition and ensure adequate ventilation. Keep away people not involved in emergency response from the area where the release took place.

- For emergency responders.
Wear adequate antistatic protections during operations. Ensure electrical grounding of all equipment used during procedures. Wear special fire-fighting equipment set out in section 5 if spill event is concomitant to the presence of open flames or other fire hazard.

6.2 ENVIRONMENTAL PRECAUTIONS: Carefully avoid any dispersion of the product in the environment, with particular attention to prevent dispersion in drains, sewerage system, surface or ground water and soil.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Material can make the surface slippery: pay attention to it. To cleaning up of spills, authorized personnel proceed to clean after removing any sources of ignition / open flames in the environment.
To remove the material as supplied, proceed to collect it in drums or sturdy plastic bags or cardboard containers to be then disposed. If the release took place in water, vacuum up spilled material because it tends to sink. Avoid ant dispersion of the material in drains, sewerages, surface or ground waters.

6.4 REFERENCE TO OTHER SECTIONS: refer to section 13 for waste disposal.

SECTION 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: Electrically bond and ground all containers (silos) and equipments, if relevant, before transfer and use of material.
Handle material in well-ventilated areas. If vapors or dusts are generated during processing (e.g. by milling or during mechanical recycling operations), provide local or general exhaustive aspiration. If aspiration is not sufficient, consider to adopt the use of appropriate masks (see section 8).
Molten material is extremely sticky: handle it with long protective gloves and heat-resistant equipment. Refer to chapter 8 for personal respiratory, hands, skin and eye protections.
Do not eat, drink and smoke in the areas where material is stored, handled, processed. Personnel handling the material should wash hands before eating, drinking and smoking.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Ensure packaging is not damaged. Store away from direct sunlight, in cool (below 40°C), dry, well-ventilated area. Keep away from heat sources, flames, spark sources, moisture, acids, bases and oxidizing or reducing agents.

@ 7.3 SPECIFIC END USE(S): Not available information

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

@ 8.1 CONTROL PARAMETERS: During extrusion process may be formed and released the by-product Tetrahydrofuran, substance with EU occupational exposure limit values:

- Tetrahydrofuran
  (Index number in Annex VI-part 3 of Regulation EC No. 1272/2008: 603-025-00-0; CAS 109-99-9)

Indicative occupational exposure limit values (UE) - COMMISSION DIRECTIVE 2000/39/EC:
8 hours: 50 ppm (150 mg/m^3)
Short-term: 100 ppm (300 mg/m^3)
Skin notation (possibility of significant uptake through the skin).

Other occupational exposure limits (applicable in UK, sources: Gestis International limit values database, EH40/2005 Workplace exposure limits):
8 hours: 50 ppm (150 mg/m^3)
Short-term: 100 ppm (300 mg/m^3)
Skin notation

8.2 EXPOSURE CONTROLS:

@ APPROPRIATE ENGINEERING CONTROLS: The product is used for the industrial processes of extrusion and thermoforming. During these processes it is possible the development of organic compounds as tetrahydrofuran above mentioned.
Material consists of solid pellets that, depending on type of processing and manipulation (e.g. milling, mechanic recycling and others), could generate dust inhalable and respirable by workers.
Considered the possibility of exposure to these chemical agents, provide local exhaustive ventilation to limit workers exposure and dispersion in air.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: safety glasses recommended if specific work or process causes a risk of ejection (EN 166).

SKIN PROTECTION:
HAND PROTECTION: there are two different situations related to the use of different gloves. In order to respect good practice of professional hygiene, use gloves resistant to penetration for the normal use and processing (EN 374). Where's the need to contact the material at high temperatures, the use of heat-resistant gloves is recommended (EN 407).

OTHER: wear protective industrial clothing and safety shoes.

RESPIRATORY PROTECTION: there are two different situations related to the use of different protections:
- if processing implies dust generation and if dust concentration detected value is higher than occupational exposure limit, is recommended the use of suitable respiratory protective equipment with P filter (1-2-3 in relation to dust concentrations in air).
- if processing implies thermal degradation of processed polymers treated at high temperatures with presence of vapors and fumes rising from the melting of starting materials, wear suitable respiratory protective equipment with combined ABP filter, unless workplace in which these processes are in place is equipped with appropriate systems used to remove vapors and fumes in order to prevent exposure to workers.

THERMAL HAZARDS: Wear heat-resistant gloves in case of manipulations with thermal hazards.

ENVIRONMENTAL EXPOSURE CONTROLS: Product does not meet the criteria for classification as hazardous for environment. Anyway avoid dispersion of material in environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND

CHEMICAL PROPERTIES

APPEARANCE:	white-grey solid pellets
ODOUR:	slight
ODOUR THRESHOLD:	Not available
PH:	Not applicable. The product is not soluble in water.
MELTING POINT/FREEZING POINT:	114°C
INITIAL BOILING POINT AND BOILING RANGE:	Not available
FLASH POINT:	Not applicable. The product is a solid.
EVAPORATION RATE:	Non applicabile.
FLAMMABILITY (SOLID/GAS):	Not available.
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	The product is not flammable or explosive.
VAPOUR PRESSURE:	Non applicabile.
VAPOR DENSITY:	Not applicable. The product is a solid.
RELATIVE DENSITY:	1.55 gm/cm^3; consult technical data sheet.
SOLUBILITY(IES):	Not soluble in water.
PARTITION COEFFICIENT: N-OCTANOL/WATER:	Not applicable. The product is insoluble in both solvents.
AUTO-IGNITION TEMPERATURE:	Not available.
DECOMPOSITION TEMPERATURE:	Not available.
VISCOSITY:	Not available.
EXPLOSIVE PROPERTIES:	No moieties associated to explosive properties are present in the chemical formula.
OXIDISING PROPERTIES:	Based on chemical formula, there are no oxidizing properties.
9.2 OTHER INFORMATION:	Not available.

SECTION 10: STABILITY AND REACTIVITY

10.1 REACTIVITY:	No hazardous reaction is expected if the product is correctly handled according to intended uses.
10.2 CHEMICAL STABILITY:	The product is stable under normal storage conditions and below 230°C.
10.3 POSSIBILITY OF HAZARDOUS REACTIONS:	Hazardous chemical reactions are not expected in normal storage and use conditions.
10.4 CONDITIONS TO AVOID:	Keep away from moisture, heat and ignition sources, flames during storage. Avoid formation of dust and vapors during processing. If processing implies dust or vapors generation, please refer to section 8.
10.5 INCOMPATIBLE MATERIALS:	Strong oxidizing or reducing agents, acids and bases can chemically alter the product.
10.6 HAZARDOUS DECOMPOSITION PRODUCTS:	During processing at high temperatures fumes and vapors that may contain tetrahydrofuran could be released.

SECTION 11: TOXICOLOGICAL INFORMATION

@ 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

INFORMATION ON TOXICOKINETICS, METABOLISM AND DISTRIBUTION:	Information not available.
@ ACUTE TOXICITY:	Not to be classified according to composition
SKIN CORROSION/IRRITATION:	Pellets do not induce irritant effects. Possibility of skin injury arising solely from the contact with the material in the molten state.
SERIOUS EYE DAMAGE/IRRITATION:	Possibility of eye damage arising solely from the contact with the material in the molten state.

RESPIRATORY OR SKIN SENSITIZATION:	Not to be classified according to composition
GERM CELL MUTAGENICITY:	Not to be classified according to composition
CANCEROGENICITY:	Not to be classified according to composition
REPRODUCTIVE TOXICITY:	Not to be classified according to composition
STOT-SINGLE EXPOSURE:	Not to be classified according to composition
STOT-REPEATED EXPOSURE:	Not to be classified according to composition
ASPIRATION HAZARD:	This hazard is not related to the product.
INFORMATION ON LIKELY ROUTES OF EXPOSURE:	Likely routes of exposures in working environments are represented by direct skin/eye contact and by inhalation of dust or fumes or vapors arising from specific product processing.
SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:	Product as supplied (in form of pellet) does not induce significant effects. Adverse effects could derive from the contact with molten material, that may cause burns with different degrees of severity depending on time of contact, temperature and area of exposure. Vapors arising from processing may irritate eyes, skin and respiratory tract.
DELAYED AND IMMEDIATE EFFECTS AS WELL AS CHRONIC EFFECTS FROM SHORT AND LONG-TERM EXPOSURE:	Vapors arising from processing may cause irritant effects on skin, eyes and respiratory mucous membranes.
INTERACTIVE EFFECTS:	Information not available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 TOXICITY:	According to available information the material is not classified as hazardous for the environment.
12.2 PERSISTENCE AND DEGRADABILITY:	The material is biodegradable. Biodegrades in composting environment.
12.3 BIOACCUMULATIVE POTENTIAL:	Bioaccumulation is not expected.
12.4 MOBILITY IN SOIL:	Information not available.
@ 12.5 RESULTS OF PBT AND VPVB ASSESSMENT:	A chemical safety assessment has not been conducted. On the base of information about components, product does not contain substances considered PBT (persistent, bioaccumulative and toxic) or vPvB (Very persistent and very bioaccumulative) in concentration ≥ 0,1%.
12.6 OTHER ADVERSE EFFECTS:	Information not available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS:	Dispose of product and packaging in accordance with local and national laws. Waste management measures shall be assessed case by case, in relation to the composition of the waste itself; if there is the need to dispose the product as supplied, material is to be considered not hazardous waste. Any cleaned cardboard packaging can be re-used or recycled according to appropriate modalities available in your area.

SECTION 14: TRANSPORT INFORMATION

Product is not classified as dangerous good (for transportation)

14.1 UN NUMBER:	not applicable.
14.2 UN PROPER SHIPPING NAME:	not applicable.
14.3 TRANSPORT HAZARD CLASS(ES):	not applicable.
14.4 PACKING GROUP:	not applicable.
14.5 ENVIRONMENTAL HAZARDS:	not applicable.
14.6 SPECIAL PRECAUTIONS FOR USERS:	not applicable.
14.7 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL AND THE IBC CODE:	not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

@ SUBSTANCES IN CANDIDATE LIST (ART.59 REACH):	On the base of information about components, substances in Candidate list are not intentionally used for the manufacture of product.
SUBSTANCES IN RESTRICTION (REACH ANNEX XVII):	No restriction applicable to product.
@ SUBSTANCES IN AUTHORIZATION (REACH ANNEX XIV):	According to information about components, product does not contain substances listed in REACH Annex XIV.
SEVESO CATEGORY (DIR. 2012/18/UE):	none.

15.2 CHEMICAL SAFETY ASSESSMENT:

A Chemical Safety Assessment according to Reg. (EC) No 1907/2006 (REACH) has not been conducted.

@ SECTION 16: OTHER INFORMATION

The product requires a SDS compiled in accordance to Annex II of Reg. (EC) No 1907/2006 (REACH) as amended by Reg. (EU) No. 2015/830 because it represents a mixture that does not meet the criteria to be classified according to CLP Regulation but contains and could form as by-product a substance (Tetrahydrofuran) for which there are Community workplace exposure limits (REACH article 31.3).
If the product is used as a component of a new mixture and/or it is transformed to form new products, the present Safety Data Sheet cannot be considered automatically as valid.
Any changes compared to previous version are indicated by @

Document history:

Version/revision	Issue date	Info/updates
Version 1.0	March 1st, 2017	First emission related to SE51F0 grade only
Version 1.1	March 11th, 2019	Integration of grades SE51F2, SE52F0, SE52F2 as a "group" sds and other updates indicated with @

Legend to abbreviations and acronyms used in the safety data sheet
CAS = Chemical Abstracts Service
CLP = Regulation (EC) No 1272/2008 (CLP = Classification, Labelling and Packaging)
EN = European standard by CEN (European Committee for Standardization)
PBT = persistent, bioaccumulative and toxic

REACH = Regulation (EC) No 1907/2006 (REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals)
vPvB = very persistent and very bioaccumulative

Key literature references and sources for data:
- Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
- Gestis International limit values database (http://limitvalue.ifa.dguv.de/)
- EH40/2005 Workplace exposure limits Third edition 2018
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency,amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Method used for the purpose of classification: Calculation method (starting from information about ingredients)

List of hazard statements:
-
List of precautionary statements:
-
Advice on appropriate training for workers:
Please refer to dispositions and prescriptions of legislation about occupational safety in force in your area.

DISCLAIMER: The herein opinions are based on information currently available to Novamont and are given in good faith but no warranty, express or implied, is made on product. The information refers to the product as delivered by Novamont, in pellet form. Since the use of these opinions and information and the conditions of use of the product are not under the control or supervision of Novamont, it is the user's responsibility to determine the safety and suitability for his own use of the product described herein. To this purpose the recipient is invited to consider the present SDS in the context of the applicable laws and regulations of the country and area where the product is to be used.