Safety Data Sheet

According to EU Directive 1907/2006, as amended

Product name: Real filament PLA Brass

Date of issue: 23-7-2018

1. Identification of the substance/preparation and of the company

1.1 Trade name: Real filament PLA Brass

1.2 Use of the product: 3Dprinter Filament

1.3 Supplier:
ReprapWorld B.V.
Wagenmaker 6a
2631 RL Nootdorp, The Netherlands
Phone: +31 (0)85 0091531

2. Hazards identification

2.1 Classification of the substance or mixture
Classification according to regulation (EC) No 1272/2008

Aquatic Acute 1	H400 Very toxic to aquatic life
Aquatic Chronic 1	H410 Very Harmful to aquatic life with long lasting effect

2.2 Label elements
Hazard pictograms

GHS09
Signal word Warning
Hazard statements
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.
Precautionary statements
P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards
Inhalation of dust or fumes leads to irritation of respiratory system.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable

3. Composition/information on ingredients

3.2 Mixtures

9051-89-2	Polylactic acid
7440-50-8	Copper
7440-31-5	Tin
7440-66-6	Zinc
7429-90-5	Aluminium (trace)
7440-22-4	Silver

With proprietary additives.

4. First aid measures

4.1 Description of first aid measures

General advice:	If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person.
If inhaled:	in case of gases evolving from molten filament, move person into fresh air.
skin contact:	Wash contact areas with soap and water.
For hot product:	Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention. Skin discoloration can occur when material comes in contact with sweat. Avoid prolonged skin contact.
In case of eye contact with molten filament:	If easy to do, remove contact lens, if worn. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed:	Rinse mouth with water. Induce vomiting immediately and call a physician. If a person vomits when lying on his back, place him in the recovery position.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: On prolonged skin contact, skin discoloration may occur.
Otherwise no acute and delayed symptoms and effects are observed.

4.3 Indication of any immediate medical attention and special treatment needed

The need to have special means for providing specific and immediate medical treatment available in the workplace is not expected.

5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Water spray, Foam, Dry powder, Carbon dioxide (CO2).
Unsuitable extinguishing media:	Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products formed under fire conditions:	Flammable hydrocarbons, Incomplete combustion products, Oxides of carbon, Smoke, Fume.

5.3 Advice for fire fighters

Fire fighting measures

Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air).

6.2 Environmental precautions
Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and materials for containment and cleaning up
Use mechanical handling equipment. Keep in suitable, closed containers for disposal.
Clean contaminated surface thoroughly.

Land Spill:	Spilled pellets present a slipping hazard on hard surfaces. Prevent dust cloud.
Water Spill:	Stop leak if you can do so without risk. Skim from surface Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted.
Note:	Local regulations may prescribe or limit action to be taken.

6.4 Reference to other sections
Refer to section (8)

7. Handling and storage

7.1 Handling
Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight and temperature have an influence on the way the product behaves during storage and handling.

7.2 Conditions for safe storage, including any incompatibilities
Try to store in a dark and cool environment. Keep away from food, drink and animal feedstuffs.

8. Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:	7440-50-8 copper
WEL Short-term value:	2** mg/m^3
Long-term value:	0.2* 1** mg/m^3 *fume **dusts and mists (as Cu)
7440-22-4 silver WEL Long-term value:	0.1 mg/m^3
7429-90-5 aluminium WEL Long-term value: *inhalable dust **respirable dust	10* 4** mg/m^3

DNEL
Copper:

Short-term DNEL (human, systemic effects): 0.082 mg Cu/kg B wt/d
Long-term DNEL (human, systemic effects): 0.041 mg Cu/kg B wt/d
Short-term NOAEL (human, oral, drinking water): 4 mg/l

PNEC
Copper:
PNEC aqua (freshwater): 7.8 µg/l
PNEC aqua (marine water): 5.2 µg/l
PNEC sediment (freshwater): 87 mg Cu/kg dry wt
PNEC sediment (marine water): 676 mg Cu/kg dry wt

8.2 Exposure controls

Appropriate Engineering Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:
Adequate ventilation should be provided so that exposure limits are not exceeded.

Personal protection:

Eye protection:	Wear safety glasses for general purpose. Wear chemical goggles for cleaning moulding machines
Respiratory protection:	Wear masks for cleaning moulding machines, in case of dust, wear mask with particle filter.
Hand protection:	Chemical resistant gloves (EN 374). Suitable materials, also with longer and direct contact (protective index 6 , >480min penetration time/ permeation time according to EN374)) Nitril rubber, isoprenechloroprenerubber, PVC etc. Heat-insulting gloves when handling molten form.
Skin and body protection:	Gloves necessary for handling molten resin, wear overall and safety shoes. Avoid contact of hot material with the skin.
Hygiene measures:	Wash hands after handling

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Solid Filament
Odour	Mild -Metallic
Colour	Brass coloured
Odour threshold	No information available
pH	Not applicable
Melting/freezing point	120-170°C
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	UEL: No data available LEL: No data available
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	No information available
Solubility(ies)	Negligible
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

10. Stability

10.1 Reactivity:
No information available

10.2 Chemical stability:
Material is stable under normal conditions.

10.3 Possibility of hazardous reactions:
No hazardous reactions observed under normal handling and storage conditions

10.4 Conditions to avoid
Avoid elevated temperatures for prolonged periods of time.

10.5 Incompatible materials:
Avoid elevated temperatures for prolonged periods of time.

10.6 Hazardous decomposition products
Avoid elevated temperatures for prolonged periods of time.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity:	
Ingestion:	No known effect.
Skin Contact :	No known effect.
Inhalation :	No known effect.
Skin Corrosion/Irritation	No known effect.
Serious eye damage/irritation	May cause mild, short-lasting discomfort to eyes.
Respiratory or skin sensitisation	No known effect. Skin discoloration can occur when material comes in contact with sweat from skin. Avoid prolonged skin contact
Germ Cell Mutagenicity	Not known to cause heritable genetic damage.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive Toxicity	No known effect
STOT-single exposure	No known effect.
STOT-repeated exposure	No known effect.
Aspiration Hazard	No known effect.
OTHER INFORMATION.	
For the product itself:	Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes and respiratory tract.
Contains:	Additives that are encapsulated in the polymer. Under the normal conditions for processing and use of this polymer the encapsulated additives are not expected to pose any health hazard. However, grinding of the polymer is not recommended without the use of appropriate measures to control exposure (see Section 8 - Engineering Controls).

12. Ecological information

12.1 Toxicity
Not applicable, no relevant information available.

12.2 Persistence and degradability
Material -- Expected to be persistent. Difficult to degrade.

12.3 Bioaccumulative potential
No information available.

12.4 Mobility in soil
Material -- Low solubility and sinks. is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

12.5 Results of PBT and vPvB assessment
This product is not, or does not contain, a substance that is a PBT or a vPvB.

12.6 Other adverse effects
No information available.

13. Disposal considerations

13.1 Waste treatment methods
No information available.

14. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/ICAO

14.1 UN number
Not regulated as a hazardous material.
Contains: UN3077

14.2 UN proper shipping name
Contains:

ADR	· UMWELTGEFÄHRDENDER STOFF, FEST, N.A.G. (Kupfer) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper,zinc)
IMDG IATA	· ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper)

14.3 Transport hazard class(es)
Miscellaneous dangerous substances and articles.

14.4 Packing Group
III

14.5 Environmental hazards

·	Marine pollutant:	Yes Symbol (fish and tree)
·	Special marking (ADR):	Symbol (fish and tree)
·	Special marking (IATA):	Symbol (fish and tree)

14.6 Special precautions for user

Warning:	Miscellaneous dangerous substances and articles.
Danger code (Kemler):	90
EMS Number:	F-A,S-F

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable
ADR:
UN "Model Regulation":
UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Waterhazard class:
Water hazard class 2 (Self-assessment): hazardous for water.

15.2 Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

16. Other information

Information is referenced from other manufacturers.
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.
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