# SAFETY DATA SHEET

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation

M-Fil Bronze

of the mixture

Registration number

Synonyms None.

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Version number 01

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

Identified uses 3D printer filament
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name eMotion Tech

Address 185 avenue des États-Unis, 31200 Toulouse, France

**Telephone** +33 (0)5 82 95 26 62 (Office hours Mo. - Fr. 9:00 - 12:00, 14:00 - 17:30)

Contact person Product Compliance

e-mail contact@emotion-tech.com

1.4. Emergency telephone

number

+33 (0)1 40 05 48 48

National Poison Information Center Paris, France

#### **SECTION 2: Hazards identification**

#### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

## Classification according to Regulation (EC) No 1272/2008 as amended

**Environmental hazards** 

Hazardous to the aquatic environment, acute Category 1

H400 - Very toxic to aquatic life.

aquatic hazard

long-term aquatic hazard

Hazardous to the aquatic environment,

Category 3

H412 - Harmful to aquatic life with

long lasting effects.

Hazard summary

Not classified for health hazards. However, occupational exposure to the mixture or substance(s)

may cause adverse health effects.

#### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

Under CLP Regulation (EC) No 1272/2008 and its amendments, labelling is not required for mixtures containing polymers or elastomers but the information appears in the Safety Data Sheet.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

## **SECTION 3: Composition/information on ingredients**

#### 3.2. Mixtures

## **General information**

Chemical name	%	CAS-No. / EC No.	<b>REACH Registration No.</b>	Index No.	Notes
Copper (encapsulated)	50 - < 60	7440-50-8 231-159-6	-	029-019-01-X	
Classification:	Aquatic Acute 1;H400(N	∕l=1), Aquatic Chroni	c 3;H412		
Polylactic acid	10 - < 20	9051-89-2 -	-	-	

Classification: -

Material name: M-Fil Bronze SDS EU

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
tin	10 - < 20	7440-31-5 231-141-8	-	-	#
Classification: -					
barium sulfate	3 - < 5	7727-43-7 231-784-4	-	-	
Classification: -					
Other components below reportable	5 - < 10				

#### List of abbreviations and symbols that may be used above

M: M-factor

levels

**Composition comments** The full text for all H-statements is displayed in section 16.

## **SECTION 4: First aid measures**

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to

protect themselves.

4.1. Description of first aid measures

Inhalation Not likely, due to the form of the product. If exposed to excessive levels of dusts or fumes, remove

to fresh air and get medical attention if cough or other symptoms develop.

Skin contact If burned by contact with hot material, cool molten material adhering to skin as quickly as possible

with water, and see a physician for removal of adhering material and treatment of burn. Do not

peel polymer from the skin.

Not likely, due to the form of the product. If hot product contacts eye, flush with water for at least Eye contact

Exposure may cause temporary irritation, redness, or discomfort.

15 minutes and seek medical attention immediately.

Not likely, due to the form of the product. Ingestion

4.2. Most important symptoms and effects, both acute and

delayed 4.3. Indication of any

immediate medical attention and special treatment needed Treat symptomatically.

## **SECTION 5: Firefighting measures**

No unusual fire or explosion hazards noted. General fire hazards

5.1. Extinguishing media

Suitable extinguishing

media

Powder. Dry sand.

Unsuitable extinguishing

media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

#### **SECTION 6: Accidental release measures**

## 6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency

personnel

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation, Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into

drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Prevent product from entering drains. Sweep up or vacuum up spillage and collect in suitable

container for disposal.

For waste disposal, see section 13 of the SDS.

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For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## **SECTION 7: Handling and storage**

7.1. Precautions for safe handling

Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

7.2. Conditions for safe

Store in tightly closed container. Store away from incompatible materials (see Section 10 of the

storage, including any incompatibilities

SDS).

Not available. 7.3. Specific end use(s)

# **SECTION 8: Exposure controls/personal protection**

## 8.1. Control parameters

## Occupational exposure limits

Austria. MAK List, OEL Ordinance (G Components	Туре	Value	Form
Copper (encapsulated) (CAS 7440-50-8)	MAK	1 mg/m3	Inhalable fraction.
		0,1 mg/m3	Fume and respirable dust.
	STEL	4 mg/m3	Inhalable fraction.
		0,4 mg/m3	Fume and respirable dust.
in (CAS 7440-31-5)	MAK	2 mg/m3	Inhalable fraction.
	STEL	4 mg/m3	Inhalable fraction.
Belgium. Exposure Limit Values.			
Components	Туре	Value	Form
barium sulfate (CAS 7727-43-7)	TWA	10 mg/m3	
Copper (encapsulated) (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.
tin (CAS 7440-31-5)	TWA	2 mg/m3	
Bulgaria. OELs. Regulation No 13 on Components	protection of workers against type	risks of exposure to chen Value	nical agents at work
barium sulfate (CAS 7727-43-7)	TWA	10 mg/m3	
Copper (encapsulated) (CAS 7440-50-8)	TWA	0,1 mg/m3	
tin (CAS 7440-31-5)	TWA	0,1 mg/m3	
Croatia. Dangerous Substance Expos Components	sure Limit Values in the Workpl Type	ace (ELVs), Annexes 1 aı Value	nd 2, Narodne Novine, 13/0 Form
barium sulfate (CAS 7727-43-7)	MAC	4 mg/m3	Respirable dust.
,		10 mg/m3	Total dust.
Copper (encapsulated) (CAS 7440-50-8)	MAC	0,21 mg/m3	Dust and fume.
	STEL	2 mg/m3	Dust and fume.
tin (CAS 7440-31-5)	MAC	2 mg/m3	
Cyprus. OELs. Control of factory atm Components	osphere and dangerous substa Type	ances in factories regulat Value	ion, PI 311/73, as amended Form
Copper (encapsulated) (CAS 7440-50-8)	TWA	0,2 mg/m3	Fume.
Czech Republic. OELs. Government	Decree 361		
Components	Туре	Value	Form
barium sulfate (CAS	TWA	5 mg/m3	Dust.

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7727-43-7)

SDS EU

Czech Republic. OELs. 0 Components		Туре	Value	Form
Copper (encapsulated) (CAS 7440-50-8)		Ceiling	2 mg/m3	Dust.
			0,2 mg/m3	Fume.
		TWA	1 mg/m3	Dust.
			0,1 mg/m3	Fume.
tin (CAS 7440-31-5)		Ceiling	4 mg/m3	
		TWA	2 mg/m3	
Denmark. Exposure Limi Components	it Values	Туре	Value	Form
Copper (encapsulated) (CAS 7440-50-8)		TLV	1 mg/m3	Dust.
			0,1 mg/m3	Fume.
Estonia. OELs. Occupati 2001)	onal Exposure Lir	nits of Hazardous Sเ	ubstances. (Annex of Regulation	No. 293 of 18 Septembe
Components		Туре	Value	Form
barium sulfate (CAS 7727-43-7)		TWA	5 mg/m3	Respirable dust.
			10 mg/m3	Total dust.
			1 mg/m3	Dust.
Copper (encapsulated) (CAS 7440-50-8)		TWA	1 mg/m3	Total dust.
(CAS 7440-50-8)			0,2 mg/m3	Respirable dust.
Finland. Workplace Expo Components	osure Limits	Туре	Value	Form
barium sulfate (CAS 7727-43-7)		TWA	10 mg/m3	Dust.
Copper (encapsulated) (CAS 7440-50-8)		TWA	0,1 mg/m3	Respirable dust and/or fume.
			0,02 mg/m3	Respirable.
tin (CAS 7440-31-5)		TWA	2 mg/m3	
France. Threshold Limit Components	Values (VLEP) for	Occupational Expos	sure to Chemicals in France, INR Value	S ED 984 Form
barium sulfate (CAS 7727-43-7)		VME	5 mg/m3	Respirable fraction.
Regulatory status:	Regulatory binding	g (VRC)		
		a (5 c)	10 mg/m3	Inhalable fraction.
Regulatory status:	Regulatory binding		2	Duet
Copper (encapsulated) (CAS 7440-50-8)		VLE	2 mg/m3	Dust.
Regulatory status:	Indicative limit (VL	-)		
		VME	1 mg/m3	Dust.
Regulatory status:	Indicative limit (VL	-)		
			0,2 mg/m3	Fume.
Regulatory status:	Indicative limit (VL			
Germany. DFG MAK List in the Work Area (DFG) Components	(advisory OELs).		Investigation of Health Hazards  Value	of Chemical Compound  Form
		Type		
barium sulfate (CAS 7727-43-7)		TWA	4 mg/m3 0,3 mg/m3	Inhalable fraction.
Conner (encangulated)		Τ\Λ/Λ	. •	Respirable fraction.
Copper (encapsulated) (CAS 7440-50-8)		TWA	0,01 mg/m3	Respirable fraction.
				Vapor and aerosol,

# Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Туре	Value	Form
		0,004 ppm	Vapor and aerosol, inhalable fraction.
Germany. TRGS 900, Limit Value Components	s in the Ambient Air at the Workplace Type	Value	Form
barium sulfate (CAS	AGW	10 mg/m3	Inhalable fraction.
7727-43-7)		1,25 mg/m3	Respirable fraction.
Greece. OELs (Decree No. 90/199 Components	99, as amended) Type	Value	Form
Copper (encapsulated) (CAS 7440-50-8)	STEL	2 mg/m3	Dust.
	TWA	1 mg/m3	Dust.
		0,2 mg/m3	Fume.
tin (CAS 7440-31-5)	TWA	2 mg/m3	
Hungary. OELs. Joint Decree on Components	Chemical Safety of Workplaces Type	Value	Form
barium sulfate (CAS	TWA	6 mg/m3	Respirable dust.
7727-43-7)		10 mg/m3	Total inhalable dust.
Copper (encapsulated)	STEL	4 mg/m3	rotai iiiriaiabie uust.
(CAS 7440-50-8)	OILL	- mg/mo	
		0,4 mg/m3	Smoke.
	TWA	1 mg/m3	
		0,1 mg/m3	Smoke.
tin (CAS 7440-31-5)	STEL	8 mg/m3	
	TWA	2 mg/m3	
	999 on occupational exposure limits		_
Components	Туре	Value	Form
Copper (encapsulated) (CAS 7440-50-8)	TWA	1 mg/m3	Total dust.
(OAO 1440-30-0)		0,1 mg/m3	Respirable dust.
Ireland. Occupational Exposure	limite	3	
Components	Туре	Value	Form
barium sulfate (CAS	TWA	2 mg/m3	Respirable dust.
7727-43-7)		-	
Copper (encapsulated) (CAS 7440-50-8)	STEL	2 mg/m3	Dust and mist.
(	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.
tin (CAS 7440-31-5)	TWA	2 mg/m3	
Italy. Occupational Exposure Lin	nits		
Components	Туре	Value	Form
barium sulfate (CAS 7727-43-7)	TWA	5 mg/m3	Inhalable fraction.
Copper (encapsulated) (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.
tin (CAS 7440-31-5)	TWA	2 mg/m3	
	accordingly column of about and according	in work environme	nt
Latvia. OELs. Occupational expo Components	Type	Value	Form

Components	Туре	Value	Form
		2 mg/m3	Dust.
Copper (encapsulated)	STEL	1 mg/m3	
CAS 7440-50-8)	TWA	0,5 mg/m3	
ithuania OELs Limit Values f	or Chemical Substances, Gener		
Components	Type	Value	Form
parium sulfate (CAS 7727-43-7)	TWA	5 mg/m3	Respirable fraction.
1721 10 7)		10 mg/m3	Inhalable fraction.
		1 mg/m3	Dust.
Copper (encapsulated) CAS 7440-50-8)	TWA	1 mg/m3	Inhalable fraction.
		0,2 mg/m3	Respirable fraction.
tin (CAS 7440-31-5)	TWA	2 mg/m3	
Netherlands. OELs (binding) Components	Туре	Value	Form
Copper (encapsulated)	TWA	0,1 mg/m3	Inhalable fraction.
(CAS 7440-50-8)			
tin (CAS 7440-31-5)	TWA	2 mg/m3	
Norway. Administrative Norms 1 Components	for Contaminants in the Workpla Type	ice Value	Form
parium sulfate (CAS	TLV	5 mg/m3	Respirable dust.
7727-43-7)		10 mg/m3	Total dust.
Copper (encapsulated)	TLV	1 mg/m3	Dust.
(CAS 7440-50-8)		·g	2401
		0,1 mg/m3	Fume.
tin (CAS 7440-31-5)	TLV	2 mg/m3	
Ordinance of the Minister of Lak	oour and Social Policy on 6 June	2 mg/m3 e 2014 on the maximum perm	
Ordinance of the Minister of Lab ntensities of harmful health fac	oour and Social Policy on 6 June tors in the work environment, Jo	2 mg/m3 e 2014 on the maximum perm ournal of Laws 2014, item 817	
Ordinance of the Minister of Lak intensities of harmful health fac Components	oour and Social Policy on 6 June	2 mg/m3 e 2014 on the maximum perm ournal of Laws 2014, item 817	
Ordinance of the Minister of Lak Intensities of harmful health fac Components Copper (encapsulated) (CAS 7440-50-8)	oour and Social Policy on 6 June tors in the work environment, Jo Type TWA	2 mg/m3 e 2014 on the maximum perm ournal of Laws 2014, item 817 Value  0,2 mg/m3	Form
Ordinance of the Minister of Lak ntensities of harmful health fac Components Copper (encapsulated) (CAS 7440-50-8)	oour and Social Policy on 6 June tors in the work environment, Jo Type	2 mg/m3 e 2014 on the maximum perm ournal of Laws 2014, item 817 Value	
Ordinance of the Minister of Lakintensities of harmful health fac Components  Copper (encapsulated) (CAS 7440-50-8) tin (CAS 7440-31-5)	oour and Social Policy on 6 June tors in the work environment, Jo Type TWA	2 mg/m3 e 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3	Form
Ordinance of the Minister of Lakintensities of harmful health fac Components Copper (encapsulated) (CAS 7440-50-8) tin (CAS 7440-31-5) Portugal. OELs. Decree-Law n. 2 Components	oour and Social Policy on 6 June tors in the work environment, Jo Type TWA TWA 290/2001 (Journal of the Republi	2 mg/m3 2 2014 on the maximum permournal of Laws 2014, item 817 Value 0,2 mg/m3 2 mg/m3 c - 1 Series A, n.266)	Form
Ordinance of the Minister of Lak ntensities of harmful health fac Components  Copper (encapsulated) (CAS 7440-50-8) (in (CAS 7440-31-5) (CAS 7	oour and Social Policy on 6 June tors in the work environment, Jo Type TWA TWA 290/2001 (Journal of the Republi Type	2 mg/m3 2 2014 on the maximum permournal of Laws 2014, item 817 Value 0,2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3	Form Inhalable fraction.
Ordinance of the Minister of Lakintensities of harmful health fac Components Copper (encapsulated) (CAS 7440-50-8) (cin (CAS 7440-31-5) Portugal. OELs. Decree-Law n. 2 Components (cin (CAS 7440-31-5) Portugal. VLEs. Norm on occup	oour and Social Policy on 6 June tors in the work environment, Je Type TWA TWA 290/2001 (Journal of the Republi Type	2 mg/m3 2 2014 on the maximum permournal of Laws 2014, item 817 Value 0,2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3	Form
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Ordinance of the Minister of Lakintensities of harmful health face Components  Copper (encapsulated) (CAS 7440-50-8) (CAS 7440-31-5)  Portugal. OELs. Decree-Law n. 2 Components  tin (CAS 7440-31-5)  Portugal. VLEs. Norm on occup Components  barium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)	TWA  TWA  TWA  TWA  TWA  TWA  TWA  TWA	2 mg/m3 2 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3 4ents (NP 1796) Value 5 mg/m3 1 mg/m3	Form Inhalable fraction.  Form Inhalable fraction. Dust and mist.
Ordinance of the Minister of Lakintensities of harmful health face Components  Copper (encapsulated) (CAS 7440-50-8) tin (CAS 7440-31-5)  Portugal. OELs. Decree-Law n. 2 Components  tin (CAS 7440-31-5)  Portugal. VLEs. Norm on occup Components  Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-31-5)  Romania. OELs. Protection of w	TWA  TWA  TWA  TWA  TWA  TWA  TWA  TWA	2 mg/m3 2 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3 ents (NP 1796) Value 5 mg/m3 1 mg/m3 0,2 mg/m3 2 mg/m3	Form Inhalable fraction.  Form Inhalable fraction. Dust and mist.
Ordinance of the Minister of Lakintensities of harmful health face Components  Copper (encapsulated) (CAS 7440-50-8) (CAS 7440-31-5)  Portugal. OELs. Decree-Law n. 2 Components  tin (CAS 7440-31-5)  Portugal. VLEs. Norm on occup Components  Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-31-5)  Romania. OELs. Protection of we Components	TWA  TWA  TWA  TWA  TWA  TWA  TWA  TWA	2 mg/m3 2 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3 4ents (NP 1796) Value 5 mg/m3 1 mg/m3 0,2 mg/m3 2 mg/m3 2 mg/m3 2 agents at the workplace	Form Inhalable fraction.  Form Inhalable fraction. Dust and mist. Fume.
Ordinance of the Minister of Lakintensities of harmful health face Components  Copper (encapsulated) (CAS 7440-50-8) tin (CAS 7440-31-5)  Portugal. OELs. Decree-Law n. 2 Components  tin (CAS 7440-31-5)  Portugal. VLEs. Norm on occup Components  Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-50-8)	TWA  TWA  TWA  TWA  TWA  TWA  TWA  TWA	2 mg/m3 2 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3 ents (NP 1796) Value 5 mg/m3 1 mg/m3 0,2 mg/m3 2 mg/m3 2 mg/m3 cal agents at the workplace Value 1,5 mg/m3	Form Inhalable fraction.  Form Inhalable fraction. Dust and mist. Fume.  Form Dust.
Ordinance of the Minister of Lakintensities of harmful health face Components  Copper (encapsulated) (CAS 7440-50-8) tin (CAS 7440-31-5)  Portugal. OELs. Decree-Law n. 2 Components  tin (CAS 7440-31-5)  Portugal. VLEs. Norm on occup Components  Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-31-5)  Romania. OELs. Protection of we Components  Copper (encapsulated)	TWA  TWA  TWA  TWA  TWA  TWA  TWA  TWA	2 mg/m3 2 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3 2 mg/m3 c - 1 Series A, n.266) Value 2 mg/m3 ents (NP 1796) Value 5 mg/m3 1 mg/m3 0,2 mg/m3 2 mg/m3	Form Inhalable fraction.  Form Inhalable fraction. Dust and mist. Fume.  Form Dust. Fume.
Ordinance of the Minister of Lakintensities of harmful health face Components  Copper (encapsulated) (CAS 7440-50-8) tin (CAS 7440-31-5)  Portugal. OELs. Decree-Law n. 2 Components  tin (CAS 7440-31-5)  Portugal. VLEs. Norm on occup Components  Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-31-5)  Romania. OELs. Protection of we Components  Copper (encapsulated)	TWA  TWA  TWA  TWA  TWA  TWA  TWA  TWA	2 mg/m3 2 2014 on the maximum perm purnal of Laws 2014, item 817 Value  0,2 mg/m3 2 mg/m3 2 mg/m3 4c - 1 Series A, n.266) Value 2 mg/m3 ents (NP 1796) Value 5 mg/m3 1 mg/m3 0,2 mg/m3 2 mg/m3 2 mg/m3 cal agents at the workplace Value 1,5 mg/m3	Form Inhalable fraction.  Form Inhalable fraction. Dust and mist. Fume.  Form Dust.

Slovakia. OELs. Regulation No. 3 Components	Type	Value	Form
parium sulfate (CAS 7727-43-7)	TWA	4 mg/m3	Inhalable fraction.
		1,5 mg/m3	Respirable fraction.
Copper (encapsulated) (CAS 7440-50-8)	TWA	1 mg/m3	Inhalable fraction.
		0,2 mg/m3	Respirable fume.
tin (CAS 7440-31-5)	STEL	4 mg/m3	
	TWA	2 mg/m3	
Slovenia. OELs. Regulations cor Official Gazette of the Republic		against risks due to exposure	to chemicals while workin
Components	Туре	Value	Form
Copper (encapsulated) (CAS 7440-50-8)	TWA	1 mg/m3	Inhalable fraction.
		0,1 mg/m3	Respirable fume.
in (CAS 7440-31-5)	TWA	2 mg/m3	
Spain. Occupational Exposure L			
Components	Туре	Value	Form
parium sulfate (CAS 7727-43-7)	TWA	10 mg/m3	
Copper (encapsulated) (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.
tin (CAS 7440-31-5)	TWA	2 mg/m3	
Sweden. OELs. Work Environme Components	ent Authority (AV), Occupationa Type	ll Exposure Limit Values (AFS Value	2015:7) Form
barium sulfate (CAS	TWA	5 mg/m3	Inhalable dust.
7727-43-7)		2,5 mg/m3	Posnirable dust
Conner (onespoulated)	TWA	_	Respirable dust.
Copper (encapsulated)	IVVA	0,01 mg/m3	Respirable dust.
•			
•	TWA	2 mg/m3	Inhalable dust.
ciin (CAS 7440-31-5) Switzerland. SUVA Grenzwerte a		2 mg/m3 <b>Value</b>	Inhalable dust.  Form
in (CAS 7440-31-5) Switzerland. SUVA Grenzwerte a Components	ım Arbeitsplatz		
cin (CAS 7440-31-5)  Switzerland. SUVA Grenzwerte a  Components  parium sulfate (CAS	nm Arbeitsplatz Type	Value 3 mg/m3	Form Respirable dust.
in (CAS 7440-31-5)  Switzerland. SUVA Grenzwerte a  Components  parium sulfate (CAS  7727-43-7)	nm Arbeitsplatz Type TWA	Value 3 mg/m3 10 mg/m3	Form  Respirable dust.  Inhalable dust.
in (CAS 7440-31-5)  Switzerland. SUVA Grenzwerte a  Components  parium sulfate (CAS 7727-43-7)  Copper (encapsulated)	nm Arbeitsplatz Type	Value 3 mg/m3	Form Respirable dust.
in (CAS 7440-31-5)  Switzerland. SUVA Grenzwerte a  Components  parium sulfate (CAS 7727-43-7)  Copper (encapsulated)	nm Arbeitsplatz Type TWA	Value 3 mg/m3 10 mg/m3	Form  Respirable dust.  Inhalable dust.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7) Copper (encapsulated) (CAS 7440-50-8)	Type TWA STEL	Value 3 mg/m3 10 mg/m3 0,2 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7) Copper (encapsulated) (CAS 7440-50-8)	Type TWA  STEL TWA	Value 3 mg/m3 10 mg/m3 0,2 mg/m3 0,1 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable fraction.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7) Copper (encapsulated) (CAS 7440-50-8)	Type TWA  STEL TWA	Value 3 mg/m3 10 mg/m3 0,2 mg/m3 0,1 mg/m3 0,02 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7) Copper (encapsulated) (CAS 7440-50-8)	Type TWA  STEL TWA STEL	Value 3 mg/m3 10 mg/m3 0,2 mg/m3 0,1 mg/m3 0,02 mg/m3 0,004 ppm	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 2727-43-7) Copper (encapsulated) (CAS 7440-50-8) ctin (CAS 7440-31-5)	Type TWA STEL TWA STEL TWA STEL TWA STEL TWA	Value  3 mg/m3  10 mg/m3  0,2 mg/m3  0,1 mg/m3  0,02 mg/m3  0,004 ppm  0,02 mg/m3  0,004 ppm	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  Itin (CAS 7440-31-5)  UK. EH40 Workplace Exposure L Components	Type TWA STEL TWA STEL TWA STEL TWA STEL TWA TWA TWA	Value 3 mg/m3 10 mg/m3 0,2 mg/m3 0,1 mg/m3 0,02 mg/m3 0,004 ppm 0,02 mg/m3 0,004 ppm Value	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.
(CAS 7440-50-8) tin (CAS 7440-31-5)  Switzerland. SUVA Grenzwerte a Components  barium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-31-5)  UK. EH40 Workplace Exposure L Components  barium sulfate (CAS 7727-43-7)	Type TWA STEL TWA STEL TWA STEL TWA STEL TWA	Value 3 mg/m3 10 mg/m3 0,2 mg/m3 0,1 mg/m3 0,02 mg/m3 0,004 ppm 0,02 mg/m3 0,004 ppm Value 4 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Form  Respirable dust.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7) Copper (encapsulated) (CAS 7440-50-8) Cin (CAS 7440-31-5)  UK. EH40 Workplace Exposure L Components Darium sulfate (CAS 7727-43-7)	Type TWA  STEL TWA STEL TWA STEL TWA STEL TWA TWA TWA  Limits (WELs) Type TWA	Value  3 mg/m3  10 mg/m3  0,2 mg/m3  0,1 mg/m3  0,02 mg/m3  0,004 ppm  0,02 mg/m3  0,004 ppm  Value  4 mg/m3  10 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable dust.
Switzerland. SUVA Grenzwerte a Components Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  Tin (CAS 7440-31-5)  UK. EH40 Workplace Exposure L Components Darium sulfate (CAS 7727-43-7)  Copper (encapsulated)	Type TWA  STEL TWA STEL TWA STEL TWA  STEL TWA  STEL TWA  STEL TWA  STEL TWA  STEL TWA  STEL TWA	Value 3 mg/m3 10 mg/m3 0,2 mg/m3 0,1 mg/m3 0,02 mg/m3 0,004 ppm 0,02 mg/m3 0,004 ppm  Value 4 mg/m3 10 mg/m3 2 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable dust.  Inhalable dust.  Inhalable dusts and mist
Switzerland. SUVA Grenzwerte a Components  Darium sulfate (CAS 7727-43-7)  Copper (encapsulated) (CAS 7440-50-8)  tin (CAS 7440-31-5)  UK. EH40 Workplace Exposure L Components  Darium sulfate (CAS	Type TWA  STEL TWA STEL TWA STEL TWA STEL TWA TWA TWA  Limits (WELs) Type TWA	Value  3 mg/m3  10 mg/m3  0,2 mg/m3  0,1 mg/m3  0,02 mg/m3  0,004 ppm  0,02 mg/m3  0,004 ppm  Value  4 mg/m3  10 mg/m3	Form  Respirable dust.  Inhalable dust.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Inhalable fraction.  Form  Respirable dust.

Material name: M-Fil Bronze 17355 Version #: 01 Issue date: 06-March-2019 EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components Value Type

tin (CAS 7440-31-5) **TWA** 2 mg/m3

**Biological limit values** 

procedures

No biological exposure limits noted for the ingredient(s).

Recommended monitoring

Follow standard monitoring procedures.

Derived no effect levels

(DNELs)

Not available.

Not available.

Predicted no effect

concentrations (PNECs)

8.2. Exposure controls

Appropriate engineering

controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been

Individual protection measures, such as personal protective equipment

**General information** Personal protection equipment should be chosen according to the CEN standards and in

established, maintain airborne levels to an acceptable level.

discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

- Hand protection Wear appropriate chemical resistant gloves.

Wear suitable protective clothing. - Other

In case of insufficient ventilation, wear suitable respiratory equipment. Respiratory protection

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Always observe good personal hygiene measures, such as washing after handling the material

and before eating, drinking, and/or smoking. Routinely wash work clothing and protective

equipment to remove contaminants.

**Environmental exposure** 

controls

Inform appropriate managerial or supervisory personnel of all environmental releases. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## **SECTION 9: Physical and chemical properties**

#### 9.1. Information on basic physical and chemical properties

**Appearance** 

Physical state Solid. filament Form Bronze. Colour Odour Metallic. **Odour threshold** Not available. Not available.

Melting point/freezing point 150 - 170 °C (302 - 338 °F)

Initial boiling point and boiling

range

Not available.

Not available. Flash point Not available. **Evaporation rate** Not available. Flammability (solid, gas) Upper/lower flammability or explosive limits

Flammability limit - lower

(%)

Not available.

Flammability limit - upper

(%)

Not available.

Not available. Vapour pressure Not available. Vapour density Relative density > 3 mg/l

Material name: M-Fil Bronze 17355 Version #: 01 Issue date: 06-March-2019 Solubility(ies)

Solubility (water) Insoluble

Partition coefficient Not available.

(n-octanol/water)

Auto-ignition temperatureNot available.Decomposition temperatureNot available.ViscosityNot available.Explosive propertiesNot explosive.Oxidising propertiesNot oxidising.

**9.2. Other information**No relevant additional information available.

## **SECTION 10: Stability and reactivity**

**10.1. Reactivity**The product is stable and non-reactive under normal conditions of use, storage and transport.

**10.2. Chemical stability**Material is stable under normal conditions.

10.3. Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with

incompatible materials.

**10.5. Incompatible materials** Strong oxidising agents. Acids.

**10.6. Hazardous** No hazardous decomposition products are known.

decomposition products

# **SECTION 11: Toxicological information**

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

**Inhalation** Prolonged inhalation may be harmful.

**Skin contact**Based on available data, the classification criteria are not met. **Eye contact**Based on available data, the classification criteria are not met.

**Ingestion** May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of

occupational exposure.

**Symptoms** Exposure may cause temporary irritation, redness, or discomfort.

#### 11.1. Information on toxicological effects

Acute toxicity Not known.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/eye

Based on available data, the classification criteria are not met.

irritation

Respiratory sensitisationBased on available data, the classification criteria are not met.Skin sensitisationBased on available data, the classification criteria are not met.Germ cell mutagenicityBased on available data, the classification criteria are not met.CarcinogenicityBased on available data, the classification criteria are not met.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

**Reproductive toxicity**Based on available data, the classification criteria are not met.

Specific target organ toxicity -

single exposure

Based on available data, the classification criteria are not met.

Specific target organ toxicity -

repeated exposure

Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

Mixture versus substance

information

No information available.

Other information Not available.

# **SECTION 12: Ecological information**

**12.1. Toxicity** Components of this product are hazardous to aquatic life.

Material name: M-Fil Bronze

Components **Species Test Results** 

Copper (encapsulated) (CAS 7440-50-8)

Aquatic

Crustacea EC50 Water flea (Daphnia magna) 0,0318 mg/l, 48 hours Fish LC50 Chinook salmon (Oncorhynchus 0,02 mg/l, 96 hours

tshawytscha)

12.2. Persistence and

No data is available on the degradability of any ingredients in the mixture.

degradability

12.3. Bioaccumulative potential No data available. Not available. **Partition coefficient** 

n-octanol/water (log Kow)

**Bioconcentration factor (BCF)** Not available. 12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB

assessment

Not a PBT or vPvB substance or mixture

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Copper (encapsulated) (CAS 7440-50-8) Copper (Cu) 1000 ug/l

Copper (Cu) 15 ug/l tin (CAS 7440-31-5) Tin (Sn) 150 ug/l

Tin (Sn) 3 ug/l

Estonia Dangerous substances in soil Data

Copper (encapsulated) (CAS 7440-50-8) Copper (Cu) 100 mg/kg

Copper (Cu) 150 mg/kg Copper (Cu) 500 mg/kg Tin (Sn) 10 mg/kg Tin (Sn) 300 mg/kg

tin (CAS 7440-31-5)

Tin (Sn) 50 mg/kg

# **SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow

this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches

with chemical or used container. Dispose of contents/container in accordance with

local/regional/national/international regulations.

Dispose in accordance with all applicable regulations. **Special precautions** 

## **SECTION 14: Transport information**

**ADR** 

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

**ADN** 

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

**IMDG** 

14.1. - 14.6.: Not regulated as dangerous goods.

according to Annex II of MARPOL 73/78 and the IBC

14.7. Transport in bulk

Not applicable.

Code

# **SECTION 15: Regulatory information**

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

#### **EU regulations**

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

#### **Authorisations**

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

#### Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at

work, as amended.

Not listed.

#### Other EU regulations

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

Not listed.

Other regulations The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP

Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation

(EC) No 1907/2006, as amended.

National regulations Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as

amended.

15.2. Chemical safety

assessment

No Chemical Safety Assessment has been carried out.

#### **SECTION 16: Other information**

List of abbreviations Not available.

References Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation

methods and test data, if available.

Full text of any H-statements not written out in full under

Sections 2 to 15 H400

H400 Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

Revision information None

**Training information** Follow training instructions when handling this material.

**Disclaimer** This safety data sheet (SDS) is issued based on the latest reference, data etc currently available.

The information in this SDS has been carefully assessed, but no guarantee is given for its accuracy. We cannot anticipate all conditions under which this product may be used. It is the

user's responsibility to take appropriate safety measures for handling.

Material name: M-Fil Bronze