

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**

Product name: MM-metal SS-steelceramic, pasty (Prod-# 200)
MM-metal SS-steel 382, pasty (Prod-# 217)
MM-metal SS-steel 382, liquid (Prod-# 218)
MM-metal SS-steel, pasty (Prod-# 201)
MM-metal SS-steel, liquid (Prod-# 202)
MM-metal SS-aluminium, pasty (Prod-# 205)
MM-metal SS-aluminium, liquid (Prod-# 206)
MM-metal SS-copper, pasty (Prod-# 209)
MM-metal SS-copper, liquid (Prod-# 210)
MM-metal SS-bronze, pasty (Prod-# 211)
MM-metal SS-bronze, liquid (Prod-# 212)
MM-metal oL-steelceramic, pasty (Prod-# 2460, 246)

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

Product use: Repair material

1.3. Details of the supplier of the safety data sheet

Manufacturer / Supplier: MultiMetall Reiner Schulze e.K.
Spenglerstraße 3
D-41749 Viersen
Phone: +49 (0) 2162/97009-0
Fax: +49 (0) 2162/97009-11
Email: info@polymermetal.com

Responsibility Safety data sheet: Email: msds@polymermetal.com

1.4. Emergency telephone number

Emergency contact number: Phone: +49 (0) 2162/97009-0

SECTION 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture**

Product definition: Mixture

Classification according to Directive (EC) No. 1272/2008 (CLP):

Eye Irrit.	Category 2	H319 Causes serious eye irritation.
Skin Irrit.	Category 2	H315 Causes skin irritation.
Skin Sens.	Category 1	H317 May cause an allergic skin reaction.
Aquatic Chronic	Category 2	H411 Toxic to aquatic life with long-lasting effects.

Classification according to Directive No. 67/548/EWG or 1999/45/EC:

Xi, R36/38
R43
N, R51/53

The full text of the R-phrases declared above can be found in Section 16.

2.2. Label elements

Labelling according to Directive (EEC) No. 1272/2008 (CLP):

Hazard pictograms:



Signal word: Warning

Hazard statements: H319 Causes serious eye irritation.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H411 Toxic to aquatic life with long-lasting effects.

Precautionary statements: P280 Wear protective gloves / protective clothing / eye protection / face protection.
 P302+352: IF ON SKIN: Wash with plenty of water/soap.

Hazardous ingredients (labelling): Reaction product Bisphenol A epoxy resins, number average MW <= 700
 Bisphenol F epoxy resin
 1,6-Bis(2,3-epoxypropoxy)hexane

Supplemental label elements: Contains epoxy constituents. See information supplied by the manufacturer.

2.3. Other hazards

Not available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Not applicable

3.2. Mixtures

Hazardous components	Identifiers	%	Classification by 67/548/EEC	Classification by (EC) Nr. 1272/2008 (CLP)
Reaction product Bisphenol A epoxy resins, number average MW <= 700	CAS: 25068-38-6 REACH-R.No 01-2119456619-26-xxx EC-No.: 500-033-5 Index: 603-074-00-8	10 - 17	Irritant, Xi, R36/38 Sensitising, R43 Dangerous for the environment, N, R51 Dangerous for the environment, R53	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Bisphenol F epoxy resin	CAS: 9003-36-5 REACH-R.No 01-211945392-40-xxx EC-No.: 500-006-8 Index: -	4 - 10	Irritant, Xi, R38 Sensitising, R43 Dangerous for the environment, N, R51 Dangerous for the environment, R53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
1,6-Bis(2,3-epoxypropoxy)hexane	CAS: 16096-31-4 REACH-R.No 01-2119463471-41-xxx EC-No.: 240-260-4 Index: -	0,2 - 5	Irritant, Xi, R36/38 Sensitising, R43 Dangerous for the environment, R52 Dangerous for the environment, R53	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 3, H412

The full text of the hazard notes declared above can be found in Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Seek medical advice.

Inhalation: Plenty of fresh air and consult a doctor as a precaution.

Skin contact: Wash off immediately with water and soap and rinse thoroughly. After continuous

skin irritation, consult a doctor.

Eye contact: Flush eye with open eyelids under running water for several minutes. Seek medical advice immediately.

Ingestion: Rinse mouth and then drink plenty of water. Instantly call for medical help. Do not induce vomiting.

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: CO₂, extinguishing powder, water mist or alcohol-resistant foam.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: carbon monoxide, carbon dioxide and sulphur dioxide

5.3. Advice for firefighters

Wear personal protective clothing and self-contained breathing apparatus (SCBA). Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing, gloves and glasses during work. Provide adequate ventilation. Avoid contact with eyes, skin and clothes.

6.2. Environmental precautions

Do not allow to enter drainage system or waters. Do not allow to enter the ground/soil.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

6.4. Reference to other sections

See section 8 for information given on personal protective equipment. Dispose contaminated material as waste according to section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Provide adequate ventilation. Avoid contact with eyes and skin. Do not eat, drink and smoke while working. Wash hands before breaks.

7.2. Conditions for safe storage, including any incompatibilities

Prevent any penetration into the ground. Store in original containers in a cool and dry place.



7.3. Specific end use(s)

No further relevant information available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No exposure limit value known.

8.2. Exposure controls

- Engineering measures: Provide adequate ventilation, especially in closed rooms.
- Hygiene measures: Remove contaminated and saturated clothes immediately. Wash hands before breaks and after finishing work. Avoid contact with eyes and skin.
- Respiratory protection: In case of inadequate ventilation, wear respiratory protection.
- Hand protection: Gloves out of synthetic material (EN 374)
Material of gloves:
Butyl rubber (recommended minimum strength 0,7 mm)
Nitrile rubber (recommended minimum strength 0,7 mm)
Find out the exact break through time from the manufacturer of the protective gloves and comply with it.
- Eye protection: Sealed safety glasses (EN 166)
- Body protection: Protective clothing

Ingredient				
Type	Exposure	Value / Unit	Population	Effects
<u>Reaction product Bisphenol A epoxy resins, number average MW <= 700</u>				
DNEL	Dermal	8,33 mg/kg bw/day	Worker	Short term systemic effects
DNEL	Dermal	8,3 mg/kg bw/day	Worker	Long term systemic effects
DNEL	Dermal	3,571 mg/kg bw/day	Consumer	Short term systemic effects
DNEL	Inhalation	12,25 mg/m3	Worker	Short term systemic effects
DNEL	Inhalation	12,3 mg/m3	Worker	Long term systemic effects
DNEL	Inhalation	0,75 mg/m3	Consumer	Long term systemic effects
DNEL	Inhalation	0,75 mg/m3	Consumer	Short term systemic effects
DNEL	Oral	0,75 mg/kg bw/day	Consumer	Short term systemic effects
DNEL	Oral	0,75 mg/kg bw/day	Consumer	Long term systemic effects
<u>Bisphenol F epoxy resin</u>				
DNEL	Dermal	0,0083 mg/cm2	Worker	Short term local effects
DNEL	Dermal	104,15 mg/kg bw/day	Worker	Long term systemic effects
DNEL	Dermal	62,5 mg/kg bw/day	Consumer	Long term systemic effects
DNEL	Inhalation	29,39 mg/m3	Worker	Long term systemic effects
DNEL	Inhalation	8,7 mg/m3	Consumer	Long term systemic effects
DNEL	Oral	6,25 mg/kg bw/day	Consumer	Long term systemic effects
<u>1,6-Bis(2,3-epoxypropoxy)hexane</u>				
DNEL	Dermal	0,0226 mg/cm2	Worker	Short term local effects
DNEL	Dermal	2,8 mg/kg bw/day	Worker	Long term systemic effects
DNEL	Dermal	0,0226 mg/cm2	Worker	Long term local effects
DNEL	Dermal	1,7 mg/kg bw/day	Consumer	Short term systemic effects
DNEL	Dermal	1,7 mg/kg bw/day	Consumer	Long term systemic effects
DNEL	Dermal	0,0136 mg/cm2	Consumer	Short term local effects
DNEL	Dermal	0,0136 mg/cm2	Consumer	Long term local effects
DNEL	Inhalation	4,98 mg/m3	Worker	Short term systemic effects
DNEL	Inhalation	4,9 mg/m3	Worker	Long term systemic effects
DNEL	Inhalation	0,44 mg/m3	Worker	Long term local effects
DNEL	Inhalation	2,9 mg/m3	Consumer	Long term systemic effects
DNEL	Inhalation	0,27 mg/m3	Consumer	Long term local effects
DNEL	Inhalation	2,9 mg/m3	Consumer	Short term systemic effects
DNEL	Oral	0,83 mg/kg bw/day	Consumer	Short term systemic effects
DNEL	Oral	0,83 mg/kg bw/day	Consumer	Long term systemic effects
Ingredient				
Type	Compartment detail		Value / Unit	

Reaction product Bisphenol A epoxy resins, number average MW <= 700

PNEC	Fresh water	0,003 mg/l
PNEC	Marine water	0,0003 mg/l
PNEC	Water (temporary intermittent release)	0,018 mg/l
PNEC	Sewage treatment plant	10 mg/l
PNEC	Sediment (Fresh water)	0,5 mg/kg dw
PNEC	Sediment (Marine water)	0,5 mg/kg dw
PNEC	Soil	0,05 mg/kg dw
PNEC	Oral (Food)	11 mg/kg

Bisphenol F epoxy resin

PNEC	Fresh water	0,003 mg/l
PNEC	Marine water	0,0003 mg/l
PNEC	Water (temporary intermittent release)	0,0254 mg/l
PNEC	Sewage treatment plant	10 mg/l
PNEC	Sediment (Fresh water)	0294 mg/kg dw
PNEC	Sediment (Marine water)	0,0294 mg/kg dw
PNEC	Soil	0,237 mg/kg dw

1.6-Bis(2,3-epoxypropoxy)hexane

PNEC	Fresh water	0,0115 mg/l
PNEC	Marine water	0,00115 mg/l
PNEC	Water (temporary intermittent release)	0,115 mg/l
PNEC	Sewage treatment plant	1 mg/l
PNEC	Sediment (Fresh water)	0,283 mg/kg dw
PNEC	Sediment (Marine water)	0,0283 mg/kg dw
PNEC	Soil	0,223 mg/kg dw

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	pasty (Prod-# 200, 217, 201, 205, 209, 211, 2460, 246) liquid (Prod-# 218, 202, 206, 210, 212)
Colour:	grey
Odour:	poor
Odour threshold:	not available
Melting / Freezing point:	not available
Boiling point / boiling range:	> 200 °C
Flash point:	> 150 °C (ISO 2719 (Pensky-Martens, closed cup))
Evaporation rate:	not available
Flammability (solid, gas):	not available
Lower explosion limit:	not available
Upper explosion limit:	not available
Vapour pressure:	< 0,11 hPa (20 °C)
Vapour density:	not available
Density:	2,6 g/cm ³ (at 20 °C) (Prod-# 200, 2460, 246) 2,85 g/cm ³ (at 20 °C) (Prod-# 217, 218, 201, 202) 1,8 g/cm ³ (at 20 °C) (Prod-# 205, 206) 3 g/cm ³ (at 20 °C) (Prod-# 209, 210, 211, 212)
Water solubility:	not mixable
Partition coefficient: n-octanol/water:	not available
Auto-ignition temperature:	not available
Decomposition temperature:	not available
Explosive properties:	Product is not potentially explosive.
Oxidising properties:	none

9.2. Other information

No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No special data available.

10.2. Chemical stability

The product is stable.

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidants.

10.6. Hazardous decomposition products

Carbon dioxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Ingredient	Endpoint / Value / Unit	Species	Method / Result
Acute effects			
<u>Reaction product Bisphenol A epoxy resins, number average MW <= 700</u>			
Oral	LD50 > 2000 mg/kg	Rat	
Dermal	LD50 > 2000 mg/kg	Rat	
Irritant and corrosive effects skin		Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion) / Irritating
Serious eye damage / eye irritation		Rabbit	OECD 405 (Acute Eye irritation/Corrosion) / Irritating
Respiratory or skin sensitization		Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay) / Sensitizing
Mutagenicity			OECD 471 (Bacterial Reverse Mutation Test) / Positive
Carcinogenicity		Rat	OECD 453 (Combined Chronis Toxicity/Carcinogenic) / Negative
Reproduction toxicity	NOEL 540 mg/kg	Rat	OECD 416 (Two-generation Reproduction Toxicity Study)
<u>Bisphenol F epoxy resin</u>			
Oral	LD50 > 5000 mg/kg	Rat	OECD 401 (Acute Oral Toxicity)
Dermal	LD50 > 2000 mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)
Irritant and corrosive effects skin		Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion) / Irritating
Serious eye damage / eye irritation		Rabbit	OECD 405 (Acute Eye irritation/Corrosion) / Not irritating
Respiratory or skin sensitization		Guinea pig	OECD 429 (Skin Sensitisation - Local Lymph Node Assay) / Sensitizing
Carcinogenicity	NOAEL 800 mg/kg/d	Mouse	Not sensitizing
Reproduction toxicity	NOEL 750 mg/kg/d	Rat	OECD 416 (Two-generation Reproduction Toxicity Study)
Aspiration danger			No
Specific target organ toxicity – repeated exposure (STOT-RE), oral	NOAEL 250 mg/kg/d	Rat	OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
<u>1,6-Bis(2,3-epoxypropoxy)hexane</u>			
Oral	LD50 2900 mg/kg	Rat	OECD 401 (Acute Oral Toxicity)
Dermal	LD50 > 2000 mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)
Inhalative	LC50 > 0,035 mg/l/4h		Highest reachable concentration
Irritant and corrosive effects skin			Irritating
Serious eye damage / eye irritation			Irritating
Respiratory or skin sensitization		Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay) / Sensitizing (skin)

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ingredient			
Toxicity / Effect	Endpoint/Time/Value/Unit	Species	Method
<u>Reaction product Bisphenol A epoxy resins, number average MW <= 700</u>			
Toxicity, Fish	LC50 / 96h / 1,5 mg/l	Salmo gairdneri	OECD 203 (Fish, Acute Toxicity Test)
Toxicity, Daphnia	EC50 / 48h / 1,1 mg/l		OECD 202 (Daphnia sp. Acute Immobilisation Test)
<u>Bisphenol F epoxy resin</u>			
Toxicity, Fish	LL50 / 96h / > 1000 mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)
Toxicity, Daphnia	NOEC/NOEL / 21d / 0,3 mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)
Toxicity, Daphnia	EL50 / 48h / > 1000 mg/l	Daphnia	OECD 202 (Daphnia sp. Acute Immobilisation Test)
Toxicity, Algae	EC50 / 72h / 1,8 mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)
<u>1,6-Bis(2,3-epoxypropoxy)hexane</u>			
Toxicity, Fish	LC50 / 96h / 30 mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)
Toxicity, Daphnia	EC50 / 48h / 47 mg/l	Daphnia magna	
Toxicity, Algae	LC50 / 48h / 23,1 mg/l		

12.2. Persistence and degradability

Ingredient	Persistence and degradability	
	Time/Value/Unit	Method
Reaction product Bisphenol A epoxy resins, number average MW <= 700	28d / 5%	OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)
1,6-Bis(2,3-epoxypropoxy)hexane	28d / 47%	OECD 301 D (Ready Biodegradability - Closed Bottle Test)

12.3. Bioaccumulative potential

Ingredient	Bioaccumulative potential / Endpoint / Value
Reaction product Bisphenol A epoxy resins, number average MW <= 700	Log Pow / 3,8
Bisphenol F epoxy resin	BCF / 150
1,6-Bis(2,3-epoxypropoxy)hexane	BCF / 1,6

12.4. Mobility in soil

Ingredient	Mobility in soil notes
Bisphenol F epoxy resin	Log Koc 3,65 OECD 121 (Estimation of the Adsorption Coefficient (KOC) on Soil and on Sewage Sludge using HPLC)
1,6-Bis(2,3-epoxypropoxy)hexane	Log Koc 2,98 OECD 121 (Estimation of the Adsorption Coefficient (KOC) on Soil and on Sewage Sludge using HPLC)

12.5. Results of PBT and vPvB assessment

Ingredient	Results of PBT and vPvB assessment
Bisphenol F epoxy resin	does not meet the PBT criteria
1,6-Bis(2,3-epoxypropoxy)hexane	does not meet the PBT criteria

12.6. Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Carry out the disposal of products and its containers in a safe way. Follow regional local authority regulations.



Waste code (EG) 080409

The waste code is just a recommendation for the user.

SECTION 14: TRANSPORT INFORMATION**14.1. UN number**

Not classified; no DGR in respect of transport provisions

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 user

None known

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Consider employment restriction for adolescents and employment medical provisions.

VOC-content: 0%

Water hazard class (Germany): 2 VwVwS

Storing class according to TRGS 510: 10-13

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

Method for the deduction of the classification according to Directive (EC) No. 1272/2008 (CLP):

Classification:	Statement:
Eye Irrit., 2, H319	Calculation method
Skin Irrit., 2, H315	Calculation method
Skin Sens., 1, H317	Calculation method
Aquatic Chronic, 2, H411	Calculation method

Full text of classifications (CLP):

Eye Irritation, 2	Eye irritation - Category 2
Skin Irritation, 2	Irritant effects to skin - Category 2



Skin Sensitisation, 1
Aquatic Chronic, 2

Sensitisation of skin - Category 1
Chronic aquatic toxicity - Category 2

Full text of shortened H-statements (CLP):

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long-lasting effects.
H412	Harmful to aquatic life with long-lasting effects.

Full text of shortened R-statements:

R36/38	Irritating to eyes and skin.
R38	Irritating to skin.
R43	May cause sensitisation by skin contact.
R51	Toxic to aquatic organisms.
R52	Harmful to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.