SAFETY DATA SHEET

GOLDLEAFAND **METALLIC POWDERS**

Bronze Powder

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SECTION 1: Identification of the sub	estance/mixture and of the company/undertaking
1.1. Product identifier	
Trade name/designation :	Bronze Powder
Product code :	2 (Fine Copper)
1.2. Relevant identified uses of the sub-	stance or mixture and uses advised against
Main use category :	Industrial uses, Professional use
1.3. Details of the supplier of the safety	data sheet
Company :	Distributed by:
	Gold Leaf and Metallic Powders
	6001 Santa Monica Boulevard
	Los Angeles, CA 90038 USA
	Telephone (800) 569-5323
	E-mail: info@glandmp.com Website: www.GLandMP.com
1.4. Emergency telephone number	
Emergency telephone :	+32 (0)475 38 36 83 (This telephone number is available 24 hours per day, 7 days per week.)
IRELAND (REPUBLIC OF)	
National Poisons Information Centre	
Beaumont Hospital	+353 18 37 99 64/+353 1 809 21 66
UNITED KINGDOM	
National Poisons Information Service	
(Newcastle Centre)	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
Regional Drugs and Therapeutics Centre,	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EU) 1272/2008

CLP-Classification

Wolfson Unit

: The product is classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

Aquatic Acute 1 H400 Aquatic Chronic 1 H410

Full text of H-phrases: see section 16

2.1.2. Classification according to EU Directives 67/548/EEC or 1999/45/EC

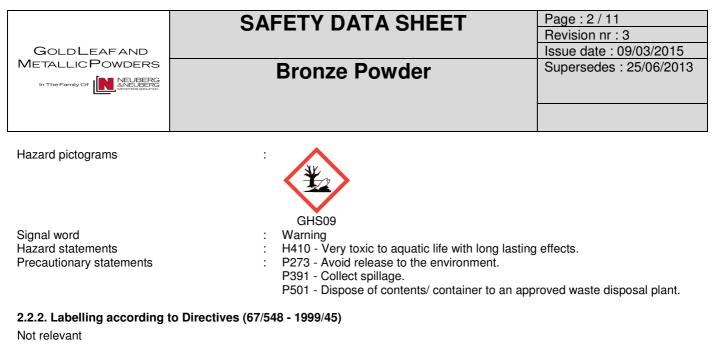
Classification N; R50/53

: This mixture is classified as hazardous according to 1999/45/EC.

Full text of R-phrases: see section 16

<u>2.2.</u> Label elements

2.2.1. Labelling according to Regulation (EU) 1272/2008



2.3. Other hazards

Other hazards

PBT/vPvB data Not applicable

:

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Directive 67/548/EEC
copper	(CAS No.) 7440-50-8 (EC No) 231-159-6 (REACH-no) 01-2119480154-42-XXXX	70 - 90	N; R50 R53
Zinc powder - zinc dust (stabilized)	(CAS No.) 7440-66-6 (EC No) 231-175-3 (EC Index) 030-002-00-7 (REACH-no) 01-2119467174-37-XXXX	10 - 30	N; R50/53
Substance name	Product identifier	%	Classification according to

Substance name	Product identifier	%	Regulation (EC) No. 1272/2008 [CLP]
copper	(CAS No.) 7440-50-8 (EC No) 231-159-6 (REACH-no) 01-2119480154-42-XXXX	70 - 90	Aquatic Acute 1, H400 (M=10) Aquatic Chronic 3, H412
Zinc powder - zinc dust (stabilized)	(CAS No.) 7440-66-6 (EC No) 231-175-3 (EC Index) 030-002-00-7 (REACH-no) 01-2119467174-37-XXXX	10 - 30	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of R- and H-phrases: see section 16

SECTION 4: First aid measures	
4.1. Description of first aid measures	
Inhalation	: Provide fresh air. When in doubt or if symptoms are observed, get medical advice.
Skin contact	: No hazards which require special first aid measures.
Eye contact	 Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
In case of ingestion	: When in doubt or if symptoms are observed, get medical advice.

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Additional advice	: Treat symptomatically.	
	See also section 8	
	First aider: Pay attention to self-protection! When in doubt or if symptoms are observed, get	medical advice
4.2. Most important sy	mptoms and effects, both acute and delayed	
Inhalation	: Repeated or prolonged exposure: (dust) : May ca impairment and lung damage.	ause respiratory
Skin contact	: No adverse effects are expected.	
Eye contact	: Dust contact with the eyes can lead to mechanic	al irritation.
Ingestion	: May be irritating.	
Other adverse effects	: none.	

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

No data available

SECTION 6: Accidental release measures

SECTION 5: Firefighting measures		
5.1. Extinguishing media		
Suitable extinguishing media	: Foam, ABC-powder, Carbon dioxide, Dry sand	
Extinguishing media which must not be used for safety reasons:	: Water	
5.2. Special hazards arising from the substance or mixture		
Fire hazard	: Non-flammable.	
Specific hazards	 Hazardous decomposition products metal oxides Do not allow run-off from fire-fighting to enter drains or water courses. Dispose according to legislation. 	
5.3. Advice for firefighters Advice for firefighters	: Special protective equipment for firefighters. In case of fire: Wear self-contained breathing apparatus.	

6.1. Personal precautions, protective e	guipment and emergency procedures
For non-emergency personnel	 Evacuate area. Prevent unauthorised persons entering the zone. Provide adequate ventilation. Use personal protective equipment as required. Personal protection equipment: see section 8 Avoid generation of dust.
For emergency responders	: Ensure procedures and training for emergency decontamination and disposal are in place. Personal protection equipment: see section 8.
6.2. Environmental precautions	
Environmental precautions	: Do not allow to enter into surface water or drains.
6.3. Methods and material for containm	nent and cleaning up
Methods for cleaning up	 Stop leak if safe to do so. Dam up. Take up mechanically. Do not rinse down with water. / Water (with cleaning agent) Dispose according to legislation.

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6.4. Reference to other sections

Personal protection equipment: see section 8 Disposal: see section 13.

SECTION 7: Handling and storage	9
7.1. Precautions for safe handling	
Handling Advices on general occupational hygiene	 Provide adequate ventilation. Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Personal protection equipment: see section 8 Avoid generation of dust. Take any precaution to avoid mixing with incompatible materials. See also section 10 Do not allow to enter into surface water or drains. Keep good industrial hygiene. When using do not eat, drink or smoke. Wash hands before breaks and immediately after using the product. Take off contaminated clothing.
7.2. Conditions for safe storage, inclu	uding any incompatibilities
Storage	 Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Protect against water. / Humidity
Packaging materials	: Keep/Store only in original container.
7.3 Specific end use(s)	

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

:

8.1. Control parameters

Exposure limit values

copper (7440-50-8)		
Austria	MAK (mg/m ³)	1 mg/m ³ (inhalable fraction) 0,1 mg/m ³ (respirable fraction, smoke)
Austria	MAK Short time value (mg/m ³)	4 mg/m ³ (inhalable fraction) 0,4 mg/m ³ (respirable fraction, smoke)
Belgium	Limit value (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Bulgaria	OEL TWA (mg/m ³)	0,1 mg/m ³ (metal vapor)
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust)
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	2 mg/m ³ (dust and fumes)
France	VLE (mg/m ³)	2 mg/m ³ (dust)
France	VME (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust)
Greece	OEL TWA (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust)
Greece	OEL STEL (mg/m ³)	2 mg/m ³ (dust)
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0,2 mg/m ³ (fume)

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Latvia	OEL TWA (mg/m ³)	0,5 mg/m ³
Spain	VLA-ED (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Switzerland	VLE (mg/m ³)	0,2 mg/m ³ (inhalable)
Switzerland	VME (mg/m ³)	0,1 mg/m ³ (inhalable)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0,1 mg/m ³ (inhalable fraction)
United Kingdom	WEL TWA (mg/m ³)	1 mg/m ³ (dust and mists) 0,2 mg/m ³ (fume)
United Kingdom	WEL STEL (mg/m ³)	0,6 mg/m ³ (calculated-fume) 2 mg/m ³ (dust and mist)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1 mg/m³ (dust) 0,1 mg/m³ (fume)
Denmark	Grænseværdie (langvarig) (mg/m ³)	1,0 mg/m ³ (dust and powder) 0,1 mg/m ³ (fume)
Finland	HTP-arvo (8h) (mg/m ³)	1 mg/m ³ 0,1 mg/m ³ (respirable dust and fume)
Hungary	AK-érték	1 mg/m ³ 0,1 mg/m ³ (fume)
Hungary	CK-érték	4 mg/m ³ 0,4 mg/m ³ (fume)
Ireland	OEL (8 hours ref) (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Ireland	OEL (15 min ref) (mg/m3)	0,6 mg/m ³ (calculated-fume) 2 mg/m ³ (dust and mist)
Lithuania	IPRV (mg/m ³)	1 mg/m ³ (inhalable fraction) 0,2 mg/m ³ (respirable fraction)
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0,1 mg/m ³ (fume) 1 mg/m ³ (dust)
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m3)	0,3 mg/m ³ (fume) 3 mg/m ³ (dust)
Poland	NDS (mg/m ³)	0,2 mg/m ³
Romania	OEL TWA (mg/m ³)	0,50 mg/m ³ (powder)
Romania	OEL STEL (mg/m ³)	0,20 mg/m ³ (fume) 1,50 mg/m ³ (dust)
Slovakia	NPHV (priemerná) (mg/m ³)	1 mg/m ³ (dust) 0,1 mg/m ³ (fume)
Slovakia	NPHV (Hraničná) (mg/m ³)	2 mg/m ³ (dust) 0,2 mg/m ³ (fume)
Sweden	nivågränsvärde (NVG) (mg/m ³)	1 mg/m ³ (total dust) 0,2 mg/m ³ (respirable dust)

Zinc powder - zinc dust (stabilized) (7440-66-6)		
Switzerland	VLE (mg/m ³)	0,4 mg/m ³ (respirable)
Switzerland	VME (mg/m ³)	0,1 mg/m ³ (respirable) 2 mg/m ³ (inhalable)

Recommended monitoring procedures

: Concentration measurement in air Personal air monitoring

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8.2. Exposure controls		
Personal protection equipment	: The type of protective equipment must be se concentration and amount of the dangerous workplace. : dust	elected according to the substance at the specific
Respiratory protection	 Use appropriate respiratory protection. Effective dust mask. (EN 149) Respirator with a particle filter (EN 143) : Full face mask (EN 136) Half-face mask (DIN EN 140) Filter type: P1 	
Hand protection	: Wear gloves in accordance with EN 388 as a mechanical risks.,The selection of specific g application and time of use in a working area account other factors on the working space, other chemicals that are possibly used, physe (protection against cutting/drilling, skill, therr instructions/specification of the supplier of global statements).	loves for a specific a, should also take into such as (but not limited to): sical requirements nal protection), and the
Eye protection	: Wear eye glasses with side protection accor	ding to EN 166.
Body protection	: No special protective equipment required.	
Thermal hazard protection	: Use dedicated equipment. Not required under normal use.	
Engineering control measures	: Use only in area provided with appropriate e Organisational measures to prevent/limit rele exposure See also section 7	
Environmental exposure controls	 Do not allow to enter into surface water or de Comply with applicable Community environr legislation. 	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	Powder
Colour	:	gold
Odour	:	odourless
Odour threshold:	:	No data available
Odour threshold:	:	No data available
рН	:	Not applicable
Melting point/freezing point	:	850 ℃
Initial boiling point and boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Non-flammable.
Upper/lower flammability or explosive limits	:	No data available
Vapour pressure	:	No data available
Vapour density	:	No data available
Density	:	7,14 - 8,96 g/cm³ @ 20 ℃
Relative density	:	No data available
Water solubility	:	Insoluble
Solubility in different media	:	No data available
Partition coefficient n-octanol/water	:	Not applicable

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Auto-ignition temperature	: Not applicable	
Decomposition temperature	: No data available	
Viscosity	: Not applicable	
Explosive properties	 Not applicable The study does not need to be conducted becan chemical groups associated with explosive prop molecule. 	
Oxidising properties	 Not applicable The classification procedure needs not to be ap no chemical groups present in the molecule whi oxidising properties. 	
9.2. Other information		
Other information	: (Apparent) Density : 0.6 - 1.4 g/cm ³ @ 20 °C	

SECTION 10: Stability and reactivity		
10.1. Reactivity		
Reactivity	:	None under normal processing. Reference to other sections: 10.5
10.2. Chemical stability		
Stability	:	The product is stable under storage at normal ambient temperatures.
10.3. Possibility of hazardous reactions		
Possibility of hazardous reactions	:	Reference to other sections: 10.4
10.4. Conditions to avoid		
Conditions to avoid	:	Remove all sources of ignition. See also section 7
10.5. Incompatible materials		
Incompatible materials	:	Acids and bases ., Oxidising substances ., Halogens ., Halogenated compounds .
10.6. Hazardous decomposition products		
Hazardous decomposition products	:	metal oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

: Not classified (Based on available data, the classification criteria are not met.)

Zinc powder - zinc dust (stabilized) (7440-66-6)		
LD50/oral/rat	> 2000 mg/kg	
LC50/inhalation/4h/rat	> 5410 mg/m ³	
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable	
Serious eye damage/eye irritation	: Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable	
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met.)	
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met.)	

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Zinc powder - zinc dust (stabiliz	zed) (7440-66-6)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met.)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met.)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met.)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met.)

Zinc powder - zinc dust (stabilized) (7440-66-6)		
NOAEL (oral, rat, 90 days) 31,52 mg/kg bodyweight/day		

Aspiration hazard

: Not classified (Based on available data, the classification criteria are not met.)

Other information

Symptoms related to the physical, chemical and toxicological characteristics, Reference to other sections: 4.2

SECTION 12: Ecological information	
12.1.ToxicityToxicity:	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

copper (7440-50-8)	
LC50 fish 1	0,0068 - 0,0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0,03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	< 0,3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 72h algae [mg/l] (1)	0,0426 - 0,0535 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h algae [mg/l] (1)	0,031 - 0,054 mg/l (Species: Pseudokirchneriella subcapitata [static])

Zinc powder - zinc dust (stabilized) (7440-66-6)		
LC50 fish 1	439 μg/l	
EC50 Daphnia 1	1833 - 2909 μg/l	
EC50 72h algae [mg/l] (1)	0,09 - 0,125 mg/l (Species: Pseudokirchneriella subcapitata [static])	
EC50 96h algae [mg/l] (1)	0,11 - 0,271 mg/l (Species: Pseudokirchneriella subcapitata [static])	
NOEC chronic fish	30 d 169 μg/L	
NOEC chronic crustacea	25 - 50 μg/L	
Additional information	EC10, algae: 2.5 - 48 μg/L NOEC, Chronic Toxicity to aquatic plants: 60 μg/L EC50, microorganisms: 5.2 mg/l NOEC, aquatic organisms: 10 - 15 μg/L LOEC, aquatic organisms: 10 - 15 μg/L	

12.2. Persistence and degradability

Persistence and degradability

: Not applicable

12.3. Bioaccumulative potential

Bioaccumulation	:	No data available
Partition coefficient n-octanol/water	:	Not applicable

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<u>12.4. Mobility in soil</u>		
Mobility	: No data available	
•		
12.5. Results of PBT and vPvB asses PBT/vPvB data	: PBT/vPvB data :	
	Not applicable	
12.6. Other adverse effects		
Other information	:	
SECTION 13: Disposal considera	ations	
•		
13.1. Waste treatment methods Product waste:	: Do not dispose of together with household waste.	
Trouble waste.	If recycling is not practicable, dispose of in compli-	ance with local regulations.
Contaminated packaging	: Delivery to an approved waste disposal company.	
Further ecological information	: Do not allow to enter into surface water or drains.	
List of proposed waste codes/waste	: Classified as hazardous waste according to Europ Waste codes should be assigned by the user, pre-	ean Union regulations.
designations in accordance with EWC	waste disposal authorities.	lerably in discussion with the
SECTION 14: Transport informat	lion	
•	tion	
14.1. UN number		
14.1. UN number UN number	: 3077	
14.1. UN number UN number 14.2. UN proper shipping name	: 3077	
14.1. UN number UN number	: 3077 : ENVIRONMENTALLY HAZARDOUS SUBSTANC	E, SOLID, N.O.S.(Copper () Zinc
14.1. UN number UN number 14.2. UN proper shipping name	: 3077 : ENVIRONMENTALLY HAZARDOUS SUBSTANC ()) : ENVIRONMENTALLY HAZARDOUS SUBSTANC	
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14.5. Environmental hazards

Environmental hazards



Other information

: Not applicable.

14.6 Special precautions for user Special precautions for user

: Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Code: IBC

: Not applicable.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Restrictions on use	: Not applicable
This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC.	: none
Authorisations	: Not applicable
15.1.2. National regulations	
DE: WGK	: 2
DE : TA-Luft	: Total dust
DE : Technische Regeln für Gefahrstoffe (TRGS)	
FR : Installations classées	: 117X
NL: ABM	: 4 - Very toxic to aquatic organisms, may cause long-term adverse
NE. ADM	effects in the aquatic environment. (A)
NL: NeR (Nederlandse emissie Richtlijn)	: Inorganic substances in powdered form
15.2. Chemical safety assessment	
Chemical Safety Assessment	: For this substance a chemical safety assessment has been carried out. Copper Zinc

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:	
Aquatic Acute 1	: Hazardous to the aquatic environment - Aquatic Acute 1
Aquatic Chronic 1	: Hazardous to the aquatic environment - chronic hazard category 1
Aquatic Chronic 3	: Hazardous to the aquatic environment - chronic hazard category 3
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.
R50	: Very toxic to aquatic organisms.
R50/53	: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	: May cause long-term adverse effects in the aquatic environment.
Ν	: Dangerous for the environment

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Key literature references and sources for data	: European Metal Particulate Association (EMPA)
Abbreviations and acronyms	 ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals TWA = time weighted average STEL = Short term exposure limit PBT = persistent, bioaccumulating and toxic (PBT). vPvB = very persistent and very bioaccumulating EWC = European Waste Catalogue NA = Not applicable

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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