

SAFETY DATA SHEET according to 91/155/EEC

Print date: 13.05.05

revised on: 19.04.04

1. IDENTIFICATION OF MATERIAL/COMPOSITION AND COMPANY NAME

• **Product information**

• **Trade name:** Balance weights
Products made of a fine zinc cast alloy

• **Manufacturer/supplier:**
DIONYS HOFMANN GmbH
Hahnstr. 53
72461 Albstadt
Germany

Tel.: +49 7432 201 0
Fax: +49 7432 201 190

• **Information department:** Operational safety

• **Emergency information desk:** +49 7432 201 173

2. COMPOSITION OF/DETAILS ON COMPONENT PARTS

• **Chemical characterisation:** Made of zinc 99,995 % according to DIN EN 1179 Z1

• Hazardous substances					
	Substance	CAS no.	Conc.	Symbol	R phrases
	Zinc	7740-66-6	98,00-99,9	Zn	
	Aluminium	7429-90-5	0-2 %	Al	
	Copper	7440-50-8	0,01-0,1 %	Cu	
	Magnesium	7439-95-4	0,001-0,01	Mg	
	Titanium	7440-32-6	0,002-0,005	Ti	

3. POTENTIAL HAZARDS

• **Hazard identification:** Not applicable

• **Special information concerning hazards to humans and environment:** The products do not involve imminent dangers.

• **Classification system:**

The classification complies with the current EC lists, but amplified by information from technical literature and company data.

• **Additional information:**

Acids and hot alkaline lyes interact with special fine zinc alloys by forming hydrogen. Fine dusts of special fine zinc alloys may also interact with water. Heating up to above 650 °C results in increasing evaporation and formation of ZnO fumes. Even before reaching the boiling point zinc inflames by exposure to air. The inhalation of ZnO fume for a longer time may cause the zinc fever lasting for 1 - 2 days.

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4. FIRST-AID MEASURES

• **General information:**

Actions are only necessary, if dusts or fumes (when melting) are inhaled or swallowed when handling this material.

- **After inhalation:** Fresh air or oxygen inlet; resting; call for medical attendance.
- **After skin contact:** Wash with water and soap and rinse thoroughly. A damage to skin is not to be expected.
- **After eye contact:** Rinse eyes with eye cleft opened under running water.
- **After swallowing:** No danger

5. FIRE-FIGHTING MEASURES

• **Suitable extinguishing agents:**

No restriction in case of ambient fire; in case of burning or liquid metal: dry sand, class D fire extinguisher (powder extinguisher).

• **Unsuitable extinguishing agents for safety reasons:**

Water and CO² in case of burning or liquid fine zinc cast alloys.

• **Particular hazards due to substance, its products of combustion or resulting gases:**

Zinc oxide fume inhaled for a longer time may cause zinc fever.

• **Special protective equipment:**

Wear breathing apparatus.

In case of liquid lead: Safety helmet with visor, flame retardant protective clothing, protective shoes with gaiters, protective gloves.

6. MEASURES IN CASE OF UNINTENDED RELEASE

• **Personal precautionary measures:** No particular measures necessary for the products in as-delivered condition.

• **Environmental protection measures:** None.

• **Cleaning/absorption procedure:** Dry absorption of dusty substances using type-approved vacuum cleaners or sweepers with sufficient air purification.
Special regulations apply to zinc dust.

7. HANDLING AND STORAGE

• **Handling:**

Do not use wet material in smelteries. Exhausters at inlet and outlet locations and a good ambient ventilation are necessary, if the fume and dust formation is not prevented by the temperature limitation of the smelting aggregate.

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- **Storage:**
- **Requirements on storage rooms and containers:**
No particular requirements. Keep dry.
- **Information on storage consolidation:**
Do not store together with acids.
- **Storage class:** 13 according to VCI storage concept.

8. EXPOSURE RESTRICTION AND PERSONAL PROTECTIVE EQUIPMENT

- **Additional information on the design of technical facilities:**
None.
- **Hygienic measures:**
No particular measures required for the handling of special fine zinc alloys.
- **Components with workplace-relevant threshold values to be monitored:**
Zinc oxide fume may form during processing, which is subject to a MAC of 5 mg/m³ in the fine dust and the peak limitation category III (TRGS 900).
- **Personal protective equipment:**
- **Breathing protection:**
May be required, if ZnO fumes or dusts occur (ZH 1/134).
- **Hand protection:** Essential, to be adapted to workplace (ZH 1/570).
- **Eye protection:** Safety goggles or eye protection may be required depending on the type of work (ZH 1/192).
- **Body protection:** Protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

• General information	
Form:	solid
Colour:	metallic bright to grey
Odour:	none
• Constitutional changes:	
Melting point/melting range:	380 - 403 °C
Boiling point/boiling range:	908 °C
• Flash point:	-
• Explosion risk:	non-explosive
• Vapour pressure at 487 °C:	1,33 hPa
• Density at 20 °C:	~ 6,97 g/cm ³
• Solubility in/miscibility with water:	insoluble
• pH value:	undetermined
• Viscosity:	
dynamic:	T = 410 °C ca. 0,0035 Pa * s T = 500 °C ca. 0,0030 Pa * s

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10. STABILITY AND REACTIVITY

- **Conditions to be avoided:**
Heating up to temperatures above > 650 °C results in formation of ZnO fume.
- **Substances to be avoided:** Uncontrolled contacts with acids, strong alkaline solutions (hydrogen formation); water to be avoided near fluid metal.
- **Hazardous decomposition products:** Hazardous decomposition products unknown.

11. INFORMATION ON TOXICOLOGY

- **Acute toxicity - oral:**
No data for the metal in as-delivered condition.
LD/LC50: For most zinc compounds the LD50 values for laboratory animals ranged between 1000 and 2500 mg/kg of body weight.
- **Acute toxicity - skin:**
No data for the metal in as-delivered condition.
- **Acute toxicity - inhalation:**
No data for the metal in as-delivered condition.
- **Other data:**
Zinc is not toxic for human skin. Massive exposition to ZnO fume may lead to "zinc fever" after a latency of several hours, but it has no after-effect after 1 - 2 days.
- **Experiences on humans:**
Zinc is an essential trace element. To compensate for lack of zinc, capsules of 50 mg zinc are administered.
- **Further information:** Excessive oral ingestion of zinc salts cause sickness and vomiting, stomach cramps and diarrhoea in humans, if a one-time dose of 500 mg is significantly exceeded.

12. INFORMATION ON ECOLOGY

- **Mobility and bioaccumulation potential:** -
- **Persistence and biodegradability:** -
- **Behaviour in environmental compartments:**
Component: -
- **Ecological effect:**
Aquatic toxicity: -
- **Remark:** Threshold values for zinc and copper are indicated in the respective wastewater treatment directive. The sewage sludge regulation includes a threshold for zinc and copper in sewage sludge.
- **Water hazard class:**
No classification for metal.

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13. INSTRUCTIONS ON DISPOSAL

- **Product:** Products for recycling
- **Recommendation:** Contact manufacturer for information on recycling
- **Packaging:**
- **Waste identification:** Packaging made of paper or cardboard (15 01 01)
Packaging made of plastic (15 01 02)

14. INFORMATION ON TRANSPORT

<ul style="list-style-type: none"> • Land transport ADR/RID and GGVS/GGVE (cross-border/inland): • ADR/RID-GGVS/E class: -----
<ul style="list-style-type: none"> • Sea transport IMDG/GGVSee: • IMDG/GGVSee class:
<ul style="list-style-type: none"> • Air transport ICAO-TI and IATA-DGR: • ICAO/IATA class:
<ul style="list-style-type: none"> • Transport/additional information: No hazardous material as per above regulations

15. REGULATIONS

<ul style="list-style-type: none"> • Identification according to EEC directives: Substance identification is not compulsory according to the EU lists or other literature sources known to us. • R phrases: None • S phrases: None • National directives: - • Technical instruction on air: Copper: Class III, emission limitation 5 mg/m³ Zinc + aluminium: No classification

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16. OTHER INFORMATION

This safety data sheet reflects our current state of knowledge on environmental relevance and operational safety regarding our product in the as-delivered condition. It describes the safety requirements for the handling of our unmodified products.

Any details beyond these specifications are for reference only, because the methods and conditions for storage, use and disposal after handing over our product are the responsibility of the user.

Therefore we assume no responsibility for any damages and/or expenses arising out of or in any way connected with the storage, use or disposal of our products.

• **Department responsible for issuing safety data sheets:**

DIONYS HOFMANN GmbH
 Dept. Operational Safety
 Hahnstr. 53
 72461 Albstadt
 Germany

Contact: Mr. Sieber