

ZINC DUST

MATERIALS SAFETY DATA SHEET

1. Identification of substance/ Mixture and of the company/undertaking :

1.1 Product identifier -

Product name	:	Zinc dust
Common commercial name	:	Zinc dust
Synonyms	:	Zinc Dust, Zinc Powder, Zinc Blue Powder
Product grades	:	All commercial quality product grades (AZD35, AZD46, AZD57 & AZD69)
Chemical formula	:	Zn
Cas number	:	7440 -66 - 6
Einecs number	:	231-175-3

1.2 Relevant identified uses of the substance/mixture:

Anti-corrosion paints, Plating, chemical processes, Hydrometallurgy.

1.3 Details of the supplier of the safety data sheet -

Supplier's name	:	INTERMEDIATE CHEMICALS CO. LTD. (ARABIAN ZINC OXIDE FACTORY)
ADDRESS	:	P. O. BOX 35790, JUBAIL 31961, K. S. A.
TELEPHONE NO.	:	+966 (13) 3417094
FAX NO.	:	+966 (13) 3417910
EMERGENCY CONTACT NO.	:	+966 500572387
Hours of operation	:	7 days a week / 24 hours per day
Date of issue	:	02/02/2013

2. HAZARD IDENTIFICATION

Product definition	:	Mono – constituent substance
Classification	:	N; R50/53
Regulation (EC) No 1272/2008 [EU-GHS/CLP]	:	Not a hazardous substance or mixture.
Signal word	:	Warning
Hazard statements	:	410 - Very toxic to aquatic life with long lasting effect
Precautionary statements	:	P273 - Avoid release to the environment P391 - Collect spillage P501 - Dispose of contents / containers in accordance with local / regional / national international regulations

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- EU Directives 67/548/EEC or 1999/45/EC : This substance is not classified as dangerous.
N; R50/53 N: Dangerous to environment.
- Hazard statements (R-phrases) : R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- Precautionary statements (S-phrases) : S60 - this material and its container must be disposed of as hazardous waste
S61 - avoid release to the environment. Refer to special instructions/safety data sheets.

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

- Physical / chemical hazards** : Fine zinc powder mixed in air may, at high concentrations, present an explosion hazard in the presence of a source of ignition. In contact with acids or water, zinc powder forms hydrogen gas.
No special danger to health. No ignition hazard and reaction hazard under normal condition

3. COMPOSITION / DATA ON COMPONENTS

<u>CHEMICAL NAME</u>	<u>CAS NO.</u>	<u>RANGE</u>	<u>EC NUMBER</u>
ZINC POWDER (Stabilized)	7440 - 66 -6	> 94%	231-175-3
ZINC OXIDE	1314 - 13 -2	< 6%	215-222-5
LEAD		< 1%	231-100-4

This SDS is not a TDS (Technical Data Sheet) or Specification, and covers a range of product grades and customer specifications, where the hazards and controls are substantially similar and covered by the same SDS. See the specific grade TDS or specification covering the tender for specific Zn powder specifications.

4. FIRST AID MEASURES

- Inhalation : No known significant effects or critical hazards.
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
- Ingestion : No known significant effects or critical hazards.
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.

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- Skin contact : No known significant effects or critical hazards.
In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes. Wash clothing before re-use. Thoroughly clean shoes before re-use. Get medical attention if irritation occurs.
- Eye contact : No known significant effects or critical hazards.
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

5. FIRE FIGHTING MEASURES

- Extinguishing media : Use dry chemical, CO2 or sand.
- Special exposure : No specific hazard.
- Hazards : This material is very toxic to aquatic organisms.
Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products : None.
- Special protective equipment for fire-fighters : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.
- Special remarks on explosion hazards : May present an explosion hazard when material is suspended in air in confined areas or equipment and subjected to spark, heat or flame.
- Remarks : Original packaging can be wetted using water for extinguishing surrounding fire in well ventilated areas. Wetted powder will heat and release gases (hydrogen). Isolate wetted packaging and powder from combustible materials and dry powder and store in a ventilated area. Avoid runoff to sewers.

6. ACCIDENTAL RELEASE MEASURE

- Personal precautions** : Immediately contact emergency personnel.
Keep unnecessary personnel away.
Use suitable protective equipment (Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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Methods for cleaning up : If emergency personnel are unavailable vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal.

Note: see section 8 for personal protective equipment and section 13 for waste disposal.

7. HANDLING AND STORAGE

Handling : Avoid contact of spilled material and runoff with soil and surface waterways.

Storage : Keep container closed tightly.
Keep container in a well-ventilated area.
Keep away from sources of ignition. Keep away from heat.

Additional : Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Keep area clean and tidy.
Avoid producing air-borne dust when handling and avoid all possible sources of ignition (spark or flame).
Keep container dry.

Packaging materials recommended : Use original container.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Zinc powder (stabilized)	: ACGIH TLV (United States, 1/2004). TWA: 10mg/m ³ 8 hours. Form: Particulates (insoluble) Not Otherwise Specified (PNOS)
Zinc oxide	: Lijst Grenswaarden / Valeurs Limites (Belgium, 12/2003). STEL: 10 mg/m ³ 15 minutes. Form: Fume TWA: 10 mg/m ³ 8 hours. Form: Dust TWA: 5 mg/m ³ 8 hours. Form: Fume

Exposure controls

Occupational exposure controls :

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

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Respiratory protection:

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin protection / Hand protection:

Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Eye protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Hygiene measures :

General:

Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid (very fine solid powder)
Color	Grey.
Odor	Odorless.
pH	Not applicable.
Melting point	420°C (788°F)
Boiling point	908 °C (1666.4°F)
Flash point	Not applicable.
Flammability (solid, gas)	Not applicable.
Explosive properties	Non-explosive in presence of shocks. May present an explosion hazard when material is suspended in air in confined areas or equipment and subjected to spark, heat or flame.

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Oxidizing properties	Not applicable.
Relative Density	7.14 (Water = 1)
Solubility	Insoluble in cold water.
Auto ignition temperature	No data available
Partition coefficient n- octanol/water at 20°C	No data available
Evaporation rate	No data available
Vapor pressure	Negligible @ 20°C
Viscosity	No data available
Vapor density	No data available

9.2 Other Information: No additional information

10. STABILITY AND REACTIVITY

- Stability : The product is stable.
- Materials to avoid : Reactive with oxidizing agents, acids.
Slightly reactive with alkalis.
Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Keep area clean and tidy.
Avoid producing air-borne dust when handling and avoid all possible sources of ignition (spark or flame).
Keep container dry.
- Hazardous decomposition products : None

11. TOXICOLOGICAL INFORMATION

Potential acute health effects

- Inhalation : No known significant effects or critical hazards.
- Ingestion : No known significant effects or critical hazards.
- Skin contact : No known significant effects or critical hazards.
- Eye contact : No known significant effects or critical hazards.

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شركة الكيماويات الوسيطة المحدودة
Intermediate Chemicals Co. Ltd.

Acute toxicity

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Zinc powder –zinc dust (stabilized)	LD50	>2000 mg/kg	Oral	Rat
	LDLo	388 mg/kg	Oral	Duck
Zinc oxide	LD50	7950 mg/kg	Oral	Mouse
	LD50	>2000 mg/kg	Oral	Dermal Rat
	LDLo	500 mg/kg	Oral	Human
	LD50	>5700 mg/m ³ (4 hours)	Inhalation	Rat [Klimisch et al. 1982]

Potential chronic health effects

- Carcinogenicity** : No known significant effects or critical hazards.
Classified A4 (Not classifiable for human or animal.) by ACGIH [zinc oxide]
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

12. ECOLOGICAL INFORMATION

Eco-toxicity data :

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Zinc powder (stabilized)	Daphnia magna (EC50)	48hours	28mg/l
	Pimephales promelas (LC50)	96 hours	0.238mg/l
	Oncorhynchus mykiss (LC50)	96hours	0.24mg/l
	Oncorhynchus mykiss (LC50)	96hours	0.41mg/l
	Oncorhynchus mykiss (LC50)	96hours	0.56 mg/l
	Daphnia magna (LC50)	96 hours	0.57 mg/l
Zinc oxide	Daphnia magna (EC50)	48 hours	>1000 mg/l
	Oncorhynchus mykiss (LC50)	96hours	1.1mg/l
	Lepomis macrochirus (LC50)	96 hours	>320 mg/l
	Pimephales promelas (LC50)	96 hours	2246 mg/l
	Selenastrum Capricornutum.[Lisec1997] (EC50)	72 hours	0.17 mg/l

Other adverse effects : Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

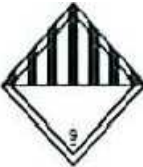

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13. DISPOSAL CONSIDERATIONS

- Methods of disposal : The generation of waste should be avoided or minimized wherever possible.
Avoid dispersal or spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
This product is recyclable. Consideration of disposal via this route should be given.
- European waste catalogue (EWC) : Not available
- Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.


14. TRANSPORT INFORMATION

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Classification	UN3077	Environmentally hazardous substance, solid, n.o.s. (Zinc)	9	III		Hazard identification number 90 Limited quantity LQ27 CEFIC Tremcard 90GM7-III
ADN Classification	UN3077	Environmentally hazardous substance, solid, n.o.s. (Zinc)	9	III		-
IMO/IMDG Classification	1436	Zinc Powder or Zinc Dust	4.3	III	-	-

Remark: The product qualities covered by this MSDS have been tested according to the criteria for classes 4.1, 4.2 and 4.3. The test results show that these qualities don't meet the criteria for classification as dangerous goods in the classes 4.1, 4.2 and 4.3 for transport: BAM, 2005 Report 11.2-916/04.

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15. REGULATORY INFORMATION

EU Regulations	:	
Hazard symbol(s)	:	Dangerous for the environment.
Risk Phrases	:	R50/53 –Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrases	:	S60 - This material and its container must be disposed of as hazardous waste. S61 –Avoid release to the environment. Refer to special instructions/ Safety data sheets.
<i>CUSTOMER MAY SPECIFY THE REQUIREMENTS ABOUT LABELLING BASED ON THE REGULATIONS OF THAT COUNTRY</i>		
Product use		Classification and labeling have been performed according to EU directives 67/548/EEC, 1999/45/EC including amendments and the intended use. - Industrial applications.
Conforms to 91/155/EEC –2001/58/EC –Belgium		
Recommended restriction of use	:	Only for industrial use. The fields of application are specified in the Technical Information belonging to the product. Any further intended application should be discussed with the manufacturer.

16. OTHER INFORMATION

Full text of R phrases referred to in sections 2 and 3 – Belgium:

R50/53 –Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 – Belgium:

N –Dangerous for the environment.

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NOTE: All R phrases and their applications have recently been adopted by the European Commission. This Material Safety Data Sheet has been adapted for Intermediate Chemicals Co. Ltd.

History

Date of issue : August, 2013.

Date of previous issue: No Previous Validation.

Version: 1

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