

# SAFETY DATA SHEET

Zinc Metal Pigment

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## Section 1. Identification

- GHS product identifier** : Zinc Metal Pigment
- Other means of identification** : Not available.
- Product type** : Powder.
- IPDS Code** : 82650227
- Trade name** : Super Extra ; Super Extra EP ; Super Fine ; Super Fine EP ; Standard 5 ; Standard 5 EP ; Standard 7 ; Standard 7 EP ; Larvik Super Fine 25 ; Zinc Sand (Larvik ZS) ZMP STANDARD 7-EP-L ; ZMP STANDARD 7 -EP-S ; ZP75
- Supplier or representative of supplier** : Umicore Malaysia Sdn Bhd  
PL0 376 Jalan Perak Empat  
81700 Pasir Gudang, Johor  
MY Malaysia  
Phone : +6 07 254 7400
- In case of emergency** : For transport in Asia and the Pacific (China excluded): +65 62 64 78 36  
For transport in China: 400 88 71 190  
For transport in Europe, Central- and South America, Israel and Africa (Non-Arabic speaking countries): +32 3 213 15 70  
For transport in the Middle East (Israel excluded) & Arabic speaking Africa: +32 3 213 33 79  
For transport in the USA and Canada: 1-877 986 4267
- Material uses** : Manufacture of chemicals. Anti-corrosion paint
- Relevant identified uses of the substance or mixture and uses advised against**  
Not applicable.
- Supplier's details** : Umicore Malaysia Sdn Bhd  
PL0 376 Jalan Perak Empat  
81700 Pasir Gudang, Johor  
MY Malaysia  
Phone : +6 07 254 7400
- Emergency telephone number (with hours of operation)** : Emergency telephone number (with hours of operation)

## Section 2. Hazards identification

- Classification of the substance or mixture** : ACUTE TOXICITY (oral) - Category 5  
AQUATIC HAZARD (ACUTE) - Category 1  
AQUATIC HAZARD (LONG-TERM) - Category 1

### GHS label elements

**Hazard pictograms** :



- Signal word** : Warning
- Hazard statements** : May be harmful if swallowed.  
Very toxic to aquatic life with long lasting effects.

### Precautionary statements



## Section 2. Hazards identification

- Prevention** : Avoid release to the environment.
- Response** : Collect spillage. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
- Storage** : Not applicable.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

### CAS number/other identifiers

- CAS number** : Not applicable.
- EC number** : Mixture.
- Product code** : 82650227

Ingredient name	%	CAS number
Zinc.	94 - 98	7440-66-6
zinc oxide	<6	1314-13-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed



## Section 4. First aid measures

### Potential acute health effects

- Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : May be harmful if swallowed.

### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
irritation  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**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.

**Remark** : May present an explosion hazard when material is suspended in air in confined areas or equipment and subjected to spark, heat or flame.



## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits



**Section 8. Exposure controls/personal protection**

Ingredient name	Exposure limits
Zinc.	<b>ACGIH TLV (United States, 1/2009).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Inhalable; Particulates (Insoluble) Not Otherwise Specified (PNOS) TWA: 3 mg/m <sup>3</sup> 8 hours. Form: Respirable; Particulates (Insoluble) Not Otherwise Specified (PNOS)
zinc oxide	<b>Ministry of Interior (Thailand, 7/1977).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Fume

**Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.

**Skin protection**

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : 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.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**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.



## Section 9. Physical and chemical properties

### Appearance

Physical state	: Solid. [Very fine powder.]
Color	: Gray.
Odor	: Odorless.
Odor threshold	: Not applicable.
pH	: Not applicable.
Melting point	: 420°C (788°F)
Boiling point	: 908°C (1666.4°F)
Flash point	: Not applicable.
Burning time	: Not available.
Burning rate	: Not available.
Evaporation rate	: Not applicable.
Flammability (solid, gas)	: Highly flammable in the presence of the following materials or conditions: oxidizing materials. 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 an excellent ventilated area. Avoid runoff to sewers.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 7.14
Solubility	: Insoluble in the following materials: cold water, hot water, methanol, diethyl ether, n-octanol and acetone.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not applicable.
SADT	: Not available.
Viscosity	: Not applicable.

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.



## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zinc. zinc oxide	LD50 Oral	Rat	>2000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5700 mg/m <sup>3</sup>	4 hours
Zinc Metal Pigment	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5.4 mg/l	4 hours
	LD50 Oral	Rat	>2000 mg/kg	-

#### Irritation/Corrosion

Not available.

#### Conclusion/Summary

- Skin** : Non-irritating to the skin.  
**Eyes** : Non-irritating to the eyes.  
**Respiratory** : Based on the read-across from ZnO, the product is not a skin or respiratory sensitizer

#### Sensitization

Product/ingredient name	Route of exposure	Species	Result
zinc oxide	skin	Guinea pig	Not sensitizing

#### Conclusion/Summary

- Skin** : Not sensitizing  
**Respiratory** : Not sensitizing

#### Mutagenicity

Product/ingredient name	Test	Experiment	Result
zinc oxide	471 Bacterial Reverse Mutation Test	Experiment: in vitro Subject: Bacteria	Negative
	475 Mammalian Bone Marrow Chromosomal Aberration Test	Experiment: In vivo Subject: Mammalian-Animal	Negative

#### Carcinogenicity

Not available.

- Conclusion/Summary** : Based on read across from ZnSO<sub>4</sub>: No data indicating any concern for carcinogenicity. No classification required.

#### Reproductive toxicity

Not available.

- Conclusion/Summary** : Based on read across from ZnO: No classification required.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.



## Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

### Potential acute health effects

- Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : May be harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
irritation  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

- General** : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Dermal	42087.5 mg/kg



## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Zinc.	Acute EC50 0.572 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 354 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 238 to 269 µg/l Fresh water	Fish - Pimephales promelas - Newly or recently hatched	96 hours
	Acute LC50 0.41 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic EC10 27.3 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Chronic EC10 59.2 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 72.9 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Chronic NOEC 9 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Chronic NOEC 178 µg/l Marine water	Crustaceans - Palaemon elegans	21 days
	Chronic NOEC 8.3 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
zinc oxide	Acute EC50 0.17 mg/l	Algae - Selenastrum Capricornutum	72 hours
	Acute EC50 1 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Chronic NOEC 0.017 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
zinc oxide	-	60960	high

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.







Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.



## Section 14. Transport information

	UN	IMDG	IATA
UN number	UN3077	UN3077	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc., zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc., zinc oxide). Marine pollutant (Zinc., zinc oxide)	Environmentally hazardous substance, solid, n.o.s. (Zinc., zinc oxide)
Transport hazard class(es)	9  	9  	9  
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes.
Additional information	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  <u>Special provisions</u> 274, 331, 335	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  <u>Emergency schedules (EmS)</u> F-A, S-F  <u>Special provisions</u> 274, 335	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  <u>Passenger and Cargo Aircraft</u> Quantity limitation: 400 kg Packaging instructions: 956 <u>Cargo Aircraft Only</u> Quantity limitation: 400 kg Packaging instructions: 956 <u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 30 kg Packaging instructions: Y956  <u>Special provisions</u> A97, A158, A179

**Special precautions for user** : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

**Remarks** : 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 or 4.3 for transport: BAM, 2005 Report II.2-916/04.

## Section 15. Regulatory information

**Hazardous Substance Act B.E. 2535 (1992)**

Type

<u>Ingredient name</u>	<u>Type</u>	<u>Authority</u>	<u>Conditions</u>
Harmful Chemicals List I	: Listed		
Harmful Chemicals List II	: Not listed		



## Section 15. Regulatory information

No known specific national and/or regional regulations applicable to this product (including its ingredients).

## Section 16. Other information

### History

Date of printing : 9/5/2014.

Date of issue/Date of revision : 9/5/2014.

Date of previous issue : 4/8/2014.

Version : 1.04

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations  
LogPow = logarithm of the octanol/water partition coefficient

References : Not available.

☑ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.