

1. Product and Company Identification

Material name	ZINC METAL POWDER
Version #	01
Revision date	10-03-2011
CAS #	Mixture
Product Codes	J.T.Baker: 4282, 4284 Macron: 8681
Synonym(s)	Powdered zinc; blue powder; CI77945; CI Pigment Black 16
Manufacturer	Avantor Performance Materials, Inc.
Address	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
Customer Service	855-282-6867
24 Hour Emergency	908-859-2151
Chemtrec	800-424-9300

2. Hazards Identification

Emergency overview	WARNING Suspect cancer hazard - may cause cancer. Harmful if inhaled, absorbed through skin, or swallowed. Irritating to eyes and respiratory system. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Causes central nervous system effects. Can cause blood disorders. Can cause kidney damage. Suspected of causing genetic defects. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Ingestion. Inhalation. Skin contact. Eye contact.
Eyes	Irritating to eyes.
Skin	Harmful if absorbed through skin. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage.
Inhalation	Harmful if inhaled. Dust irritating to respiratory tract. Can cause severe central nervous system depression (including unconsciousness). Inhalation of powder or fumes may cause metal fume fever.
Ingestion	Harmful if swallowed. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage.
Target organs	Eyes. Skin. Respiratory system. Central nervous system. Reproductive organs. Blood. Brain. Kidneys. Lung
Chronic effects	Suspect cancer hazard - may cause cancer. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Suspected of causing genetic defects. Causes central nervous system effects. Can cause kidney damage. Risk of damage to blood system. Can cause lung damage. Lead is accumulated in the body and may cause damage to the brain and nervous system after prolonged exposure.
Potential environmental effects	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
ZINC	7440-66-6	96 - 97
ZINC OXIDE	1314-13-2	0 - 3
LEAD	7439-92-1	0 - 0.3

4. First Aid Measures

First aid procedures

Eye contact

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

Skin contact

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.

Inhalation

Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.

Ingestion

Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

Notes to physician

Lead - To avoid further damage, those with kidney, neurological or blood disease should avoid exposure. Exposure during pregnancy should be avoided. Keep victim under observation. Treat symptomatically. Symptoms may be delayed.

General advice

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties

Dust may form explosive mixture with air. Contact with water releases flammable gases, which may ignite spontaneously.

Extinguishing media

Suitable extinguishing media

Dry chemical.

Unsuitable extinguishing media

Dousing metallic fires with water may generate hydrogen gas, an extremely dangerous explosion hazard, particularly if fire is in a confined environment. Do not use halogenated extinguishing agents or foam. Carbon dioxide (CO₂).

Protection of firefighters

Protective equipment and precautions for firefighters

Firefighters should wear full protective gear. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific methods

In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

Hazardous combustion products

Fire may produce irritating, corrosive and/or toxic gases.

6. Accidental Release Measures

Personal precautions

Keep unnecessary personnel away. Keep upwind. Ventilate the area. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods for containment

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up

Avoid dust formation. Should not be released into the environment.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Large Spills: Collect dust or particulates using a vacuum cleaner with a HEPA filter.

Never return spills in original containers for re-use. Clean contaminated surface thoroughly. Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling

Keep formation of airborne dusts to a minimum. Dust may form explosive mixture with air. Avoid heat, sparks, open flames and other ignition sources. Do not breathe dust or vapor from heated material. Do not get this material in your eyes, on your skin, or on your clothing. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

Storage

Keep container tightly closed. Store in a well-ventilated place. Keep away from moisture.

8. Exposure Controls / Personal Protection

ACGIH

Components	Type	Value	Form
LEAD (7439-92-1)	BEL	300.0000 µg/l	
	TWA	0.0500 mg/m3	
ZINC OXIDE (1314-13-2)	STEL	10.0000 mg/m3	Respirable fraction.
	TWA	2.0000 mg/m3	Respirable fraction.

Occupational exposure limits**U.S. - OSHA****Components**

Components	Type	Value	Form
LEAD (7439-92-1)	TWA	0.0500 mg/m3	
ZINC OXIDE (1314-13-2)	PEL	15.0000 mg/m3	Total dust.
		5.0000 mg/m3	Respirable fraction.
		5.0000 mg/m3	Fume.

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Explosion proof exhaust ventilation should be used.

Personal protective equipment**Eye / face protection**

Chemical goggles and face shield are recommended.

Skin protection

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: High-efficiency particulate respirator with full facepiece.

General hygiene considerations

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

General

Laundry contaminated clothing before reuse.

9. Physical & Chemical Properties

Appearance

Powder.

Color

Gray or bluish-gray.

Odor

Not available.

Odor threshold	Not available.
Physical state	Solid.
Form	Powder.
pH	Not available.
Melting point	786.2 °F (419 °C)
Freezing point	786.2 °F (419 °C)
Boiling point	1664.6 °F (907 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor density	Not available.
Specific gravity	7.14
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	860 °F (460 °C)
Decomposition temperature	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions. Material reacts with water.
Conditions to avoid	Heat, flames and sparks. Exposure to moisture.
Incompatible materials	Water, moisture. Strong oxidizing agents. Strong acids. Strong bases. Halogens. This product may react with some chlorinated and non-chlorinated hydrocarbon solvents.
Hazardous decomposition products	Zinc oxide. May include oxides of lead.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product

ZINC METAL POWDER (Mixture)

Test Results

Acute Inhalation LC50 Mouse: 373 mg/l estimated

Acute Oral LD50 Rat: 641 mg/kg estimated

Components

ZINC (7440-66-6)

Test Results

Acute Oral LD50 Rat: 630 mg/kg

ZINC OXIDE (1314-13-2)

Acute Inhalation LC50 Mouse: > 5.7 mg/l 4.00 Hours

Acute Oral LD50 Rat: > 5 g/kg

Sensitization

Not classified.

Acute effects

Harmful if inhaled, absorbed through skin, or swallowed. Causes central nervous system effects. Can cause kidney damage. Risk of damage to blood system.

Local effects

Irritating to eyes. Irritating to respiratory system.

Chronic effects

Causes central nervous system effects. Can cause lung damage. Can cause kidney damage. Risk of damage to blood system. May cause damage to the liver. Lead is accumulated in the body and may cause damage to the brain and nervous system after prolonged exposure.

Carcinogenicity

Contains a substance which has been shown to cause cancer in laboratory animals.

ACGIH Carcinogens

LEAD (CAS 7439-92-1)

A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

LEAD (CAS 7439-92-1)

2B Possibly carcinogenic to humans.

US NTP Report on Carcinogens: Anticipated carcinogen

LEAD (CAS 7439-92-1)

Anticipated carcinogen.

Skin corrosion/irritation

Not classified.

Epidemiology

No epidemiological data is available for this product.

Mutagenicity

Suspected of causing genetic defects.

Neurological effects

Central and/or peripheral nervous system damage.

Reproductive effects

May damage fertility or the unborn child.

Teratogenicity

Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals.

Symptoms and target organs

Irritant effects. Drowsiness and dizziness. Decrease in motor functions. Unconsciousness. Renal injury. Circulatory collapse. Birth defects.

Further information

Contains lead which can accumulate in the body. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. Danger of very serious irreversible effects. Symptoms may be delayed.

12. Ecological Information**Ecotoxicological data****Product****Test Results**

ZINC METAL POWDER (Mixture)

EC50 Daphnia: 2.8479 mg/l 48.00 hours estimated

LC50 Fish: 29.98 mg/l 96.00 hours estimated

Components**Test Results**

ZINC OXIDE (1314-13-2)

LC50 Fathead minnow (Pimephales promelas): 2246 mg/l 96.00 hours

LEAD (7439-92-1)

LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss): 1.17 mg/l 96.00 hours

ZINC (7440-66-6)

EC50 Water flea (Daphnia magna): 2.8 mg/l 48.00 hours

LC50 Fathead minnow (Pimephales promelas): 0.211 mg/l 96.00 hours

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Persistence and degradability

The product is not readily biodegradable.

Partition coefficient (n-octanol/water)

Not available

13. Disposal Considerations**Disposal instructions**

Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.

Contaminated packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

14. Transport Information**DOT**

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

LEAD (CAS 7439-92-1)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
ZINC (CAS 7440-66-6)	1.0 %
ZINC OXIDE (CAS 1314-13-2)	1.0 % N982

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Reportable threshold

LEAD (CAS 7439-92-1)	100 LBS
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US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

LEAD (CAS 7439-92-1)	Listed.
ZINC (CAS 7440-66-6)	Listed.
ZINC OXIDE (CAS 1314-13-2)	Listed. N982

CERCLA (Superfund) reportable quantity

ZINC: 1000.0000
LEAD: 10.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - Yes
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Section 311 hazardous chemical	Yes
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Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

LEAD (CAS 7439-92-1)	Listed.
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US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

LEAD (CAS 7439-92-1) Listed: October 1, 1992 Carcinogenic.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

LEAD (CAS 7439-92-1) Listed: February 27, 1987 Developmental toxin.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

LEAD (CAS 7439-92-1) Listed: February 27, 1987 Female reproductive toxin.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

LEAD (CAS 7439-92-1) Listed: February 27, 1987 Male reproductive toxin.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

LEAD (CAS 7439-92-1) 500 LBS

ZINC (CAS 7440-66-6) 500 LBS

ZINC OXIDE (CAS 1314-13-2) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards

LEAD (CAS 7439-92-1) LISTED

ZINC (CAS 7440-66-6) LISTED

US - Pennsylvania RTK - Hazardous Substances: Listed substance

LEAD (CAS 7439-92-1) Listed.

ZINC (CAS 7440-66-6) Listed.

ZINC OXIDE (CAS 1314-13-2) Listed.

Saf-T-Data

Health: 2 - Moderate (Cancer)

Flammability: 2 - Moderate

Reactivity: 2 - Moderate

Contact: 2 - Moderate

Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: G - Green (General Storage)

16. Labeling Info

Label Hazard Warning

WARNING

Suspect cancer hazard - may cause cancer. Harmful if inhaled, absorbed through skin, or swallowed. Irritating to eyes and respiratory system. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Causes central nervous system effects. Can cause blood disorders. Can cause kidney damage. Suspected of causing genetic defects. Prolonged exposure may cause chronic effects.

Label Precautions

Keep away from heat, sparks and flame. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed. DO NOT allow water to come into contact with this material.

Label First Aid

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

17. Other Information

NFPA ratings

Health: 2

Flammability: 1

Instability: 2

Special hazards: W

Disclaimer

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