

SAFETY DATA SHEET

Preparation Date: 11/16/2015

Revision Date: 12/07/2016

Revision Number: G3

1. IDENTIFICATION

Product identifier

Product code: L1080
Product Name: LEAD OXIDE, YELLOW POWDER, REAGENT

Other means of identification

Synonyms: Lead Monoxide
 Lead (II) oxide
 Litharge
 Lead protoxide
 Plumbous oxide

CAS #: 1317-36-8
RTECS # OG1750000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Danger

Hazard statements
 Harmful if swallowed

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Harmful if inhaled
May cause cancer
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Causes mild skin irritation

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Lead Oxide, Yellow	1317-36-8	100

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact:

Flush eyes with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give

oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Ingestion may cause vomiting and nausea. Abdominal pain. May cause constipation or diarrhea. May cause loss of appetite. It may affect the kidneys. Central nervous system effects. Fatigue. Headache. Dizziness. Convulsions. Muscle weakness. Paresthesia (numbness and tingling of the extremities). May affect the cardiovascular system. High blood pressure. A blue line (AKA "lead line") at the gum margin. May affect the blood.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: No information available.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Avoid dust formation. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Should not be released into the environment. Prevent entry into waterways, sewers.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Strong oxidizing agents
Strong reducing agents
Acids
Boron
Sodium
acetylides
Chlorine
Fluorine
Hydrogen peroxide
Sulfides
Lithium carbide
Aluminum powder

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

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United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Lead Oxide, Yellow	1317-36-8	0.05 mg/m ³ TWA (as Pb)	0.050 mg/kg TWA (as Pb)	0.05 mg/m ³ TWA (as Pb)	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Lead Oxide, Yellow	1317-36-8	0.05 mg/m ³ TWA (as Pb)	0.05 mg/m ³ TWA (as Pb)	0.05 mg/m ³ TWA (as Pb)	0.05 mg/m ³ TWA _{EV} (as Pb)

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Lead Oxide, Yellow	1317-36-8	0.15 mg/m ³ TWA (as Pb)	0.15 mg/m ³ TWA (as Pb)

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. 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.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection:	Goggles
Skin and body protection:	Long sleeved clothing. Chemical resistant apron. Gloves.
Respiratory protection:	Wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent.
Hygiene measures:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid	Appearance: Powder.	Color: Yellow.
Odor: No information available.	Taste No information available.	Formula: PbO
Molecular/Formula weight: 223.19	Flammability: No information available	Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): 886°C/1626.8°F	Decomposition temperature(°C/°F): No information available

Boiling point/range(°C/°F):
1470°C/2678°F

Bulk density:
No information available

Density (g/cm3):
9.53

Specific gravity:
9.53

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Insoluble in Alcohol
Soluble in Acetic acid
Very slightly soluble in water
Solubility in Water: 17.2 mg/l @ 20°C

10. STABILITY AND REACTIVITY

Reactivity

Reactive with strong oxidizing agents

Reactive with acids

A mixture of lead oxide with boron incandescens on heating, and with silicon the reaction is vigorous. If aluminum is present the mixture explodes on heating (but the same is true if silicon is absent)

Addition of peroxyformic acid to lead oxide cause an immediate violent explosion

Strong explosion occurs when aluminum is heated with lead oxide

A mixture of lead oxide and glycerol ignites on contact with gaseous fluorine

Dichloromethylsilane in the presence of lead oxide ignites on contact

Contact of Lead Oxide with Hydrogen Trisulfide causes violent decomposition and ignition

Lead oxide mixed with finely sodium ignition, and a mixture of the latter with zirconium explodes on heating

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Stable at normal conditions.

Incompatible Materials:

- Strong oxidizing agents
- Strong reducing agents
- Acids
- Boron
- Sodium acetylides
- Chlorine
- Fluorine
- Hydrogen peroxide
- Sulfides
- Lithium carbide
- Aluminum powder

Hazardous decomposition products: No information available.

Other Information

Corrosivity: No information available

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Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

Lead Oxide, Yellow	
CAS-No.	1317-36-8

LD50/oral/rat = > 10000 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available

LD50/dermal/rat = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = > 10000 mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Mild skin irritation.

Eye Contact: May cause eye irritation.

Inhalation May cause irritation of respiratory tract. If inhaled dose is eventually absorbed and transferred to the gastrointestinal tract the following symptoms may occur: metallic taste, chest pain, fatigue, headache, irritability, reduced memory, mood

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and personality changes, ataxia, delirium, convulsions, aching bones and muscles, constipation, abdominal pain, decreased appetite, and possible coma and death.

Ingestion

May cause abdominal pain. May cause gastrointestinal tract irritation with nausea, vomiting. May cause metallic taste. May cause thirst. May cause loss of appetite. May cause muscle weakness. May affect the peripheral nervous system (paresthesia - a tingling, pricking, or numbness of the skin (known as the feeling of "pins and needles) generally of the hands and feet (extremities)),. May cause central nervous system effects (affect behavior). May affect behavior/central nervous system (dizziness, headache). May affect behavior/central nervous system (hallucinations, insomnia). May affect the kidneys. Acute lead poisoning may also result in "lead line" along the gums, high lead levels in the blood and urine, and possible coma or death.

Aspiration hazard

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity

Skin: May be absorbed through the skin on prolonged exposure and cause systemic effects of chronic lead poisoning. See symptoms of ingestion.
 Ingestion or Inhalation: It may cause chronic lead poisoning. The hallmarks of chronic lead poisoning are effect on the /central nervous system and peripheral nervous system (anxiety, headache, malaise, fatigue, irritability, forgetfulness, insomnia, lassitude, seizures, motor weakness which may lead to paralysis of the extensor muscles fo the wrist and ankles), anemia, kidney damage (interstitial nephritis, reduced glomerular filtration rate, acute renal failure noted by proteinuria, glycosuria, aminoaciduria). Other symptoms include hypertension or hypotension, metallic taste, abdominal tenderness, colic, constipation, anorexia and weight loss and/or malnutrition, facial pallor, hearing loss, elevated liver enzymes (liver function tests), hyperuricemia (increased uric acid levels)and gout, and possibly a lead line in the gum margins.

Sensitization:

No information available.

Mutagenic Effects:

No information available

Carcinogenic effects:

May cause cancer. Probably carginogenic to humans.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Lead Oxide, Yellow	1317-36-8	Group 2A - Probably Carcinogenic to Humans (listed as Lead inorganic compounds) - Monograph 87 [2006] Supplement 7 [1987] Monograph 23 [1980]	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed as Lead inorganic compounds)	Reasonable Anticipated to be A Human Carcinogen (listed as lead compounds)	Present	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

Reproductive toxicity May damage fertility or the unborn child

Reproductive Effects: May cause adverse reproductive effects
Possible risk of impaired fertility

Developmental Effects: May cause adverse developmental effects
May cause harm to the unborn child

Teratogenic Effects: May cause birth defects (teratogenic effects) based on animal test data

Specific Target Organ Toxicity

STOT - single exposure No information available.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Target Organs: Blood. Bone Marrow. Central nervous system. Peripheral nervous system. Kidneys.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Lead Oxide, Yellow - 1317-36-8

Freshwater Fish Species Data: 0.298 mg/L LC50 Pimephales promelas 96 h static 1

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Lead Oxide, Yellow	1317-36-8	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2291

Proper Shipping Name: Lead compounds, soluble, n.o.s. (lead monoxide)

Hazard Class: 6.1

Subsidiary Class No information available

Packing group: III

Emergency Response Guide Number 151

Marine Pollutant No data available

DOT RQ (lbs): No information available
Special Provisions 138, T1, TP33, IB8, IP3
Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description. [DOT]: (P) - Identifies a material that is a marine pollutant.
Description: UN2291, Lead compounds, soluble, n.o.s. (Lead Oxide, Yellow), 6.1, III

TDG (Canada)
UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s.
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No Information available
Description: UN2291, Lead compound, soluble, n.o.s., 6.1, III

ADR
UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s.
Hazard Class: 6.1
Packing Group: III
Subsidiary Risk: No information available
Special Provisions 199, 274, 535
Description: UN2291, Lead compound, soluble, n.o.s. (Lead Oxide, Yellow), 6.1, III, ENVIRONMENTALLY HAZARDOUS

IMO / IMDG
UN-No: UN2291
Proper Shipping Name: Lead compounds, soluble, n.o.s. (lead monoxide)
Hazard Class: 6.1
Subsidiary Risk: P
Packing Group: III
Marine Pollutant Marine Pollutant
EMS: F-A
Special Provisions 199, 274
Description UN2291, Lead compound, soluble, n.o.s. (LEAD OXIDE, YELLOW), 6.1, III, Marine pollutant

RID
UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s.
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: III
Special Provisions 199, 274, 535
Description: UN2291, Lead compound, soluble, n.o.s. (Lead Oxide, Yellow), 6.1, III, ENVIRONMENTALLY HAZARDOUS

ICAO
UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s.
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: III
Description: UN2291, Lead compound, soluble, n.o.s. (Lead Oxide, Yellow), 6.1, III
Special Provisions A92

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UN-No: UN2291
Proper Shipping Name: Lead compound, soluble, n.o.s.
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 6L
Special Provisions No information available
Description: UN2291, Lead compound, soluble, n.o.s. (Lead Oxide, Yellow), 6.1, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Lead Oxide, Yellow	1317-36-8	Present	Present KE-21926	Present	Present (1)-527	Present	Present	Present 215-267-0

U.S. Regulations

Lead Oxide, Yellow

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 4030
New Jersey (EHS) List: SN 2266 500 lb TPQ (listed as lead compounds)
New Jersey - Discharge Prevention - List of Hazardous Substances: Present (listed lead compounds)
Pennsylvania RTK: Environment Hazard (listed as lead compounds)
Pennsylvania RTK - Environmental Hazard List Present (listed as lead compounds)
California Directors List of Hazardous Substances: Present (listed as lead compounds)

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Lead Oxide, Yellow	1317-36-8	carcinogen (listed as lead compounds)	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Lead Oxide, Yellow	1317-36-8	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Lead Oxide, Yellow	1317-36-8	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
D2A Very toxic materials

Components
Lead Oxide, Yellow

WHIMHAZ
D2A

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Lead Oxide, Yellow	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Lead Oxide, Yellow	1317-36-8	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Lead Oxide, Yellow	1317-36-8	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Lead Oxide, Yellow	1317-36-8	Not listed

EU Classification

R-phrase(s)

- R33 - Danger of cumulative effects.
- R61 - May cause harm to the unborn child.
- R62 - Possible risk of impaired fertility.
- R50 - Very toxic to aquatic organisms.
- R53 - May cause long-term adverse effects in the aquatic environment.
- R20/22 - Harmful by inhalation and if swallowed.

S -phrase(s)

- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S53 - Avoid exposure - obtain special instructions before use.
- 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.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Lead Oxide, Yellow	1317-36-8	Xn; R20/22 R33 N; R50-53 Repr. Cat. 1; R61 Repr. Cat. 3; R62	2.5%≤C: Repr. Cat. 3; R62 1%≤C: R20/22 0.5%≤C: R33	53-45-60-61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

- Xn - Harmful.
- N - Dangerous for the environment.

Xn



N



16. OTHER INFORMATION

Product code: L1080

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Preparation Date: 11/16/2015
Revision Date: 12/07/2016
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet