

**MATERIAL SAFETY DATA SHEET****1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

MANUFACTURER	PIGMENT SANAYI A.Ş.
ADDRESS and PHONE NUMBERS IN CASE OF EMERGENCY	Kemalpaşa Asfaltı No:44 Kemalpaşa Izmir/TURKEY Tel:+902328770400 Fax:+902328770401
PRODUCT NAME	Red Lead Pigment
TRADE NAMES/SYNONYMS	LEAD OXIDE (Pb3O4); C.I. 77578; C.I. PIGMENT RED 105; LEAD ORTHOPLUMBATE; LEAD OXIDE; LEAD OXIDE (3:4); LEAD OXIDE RED; LEAD TETRAOXIDE; MINERAL ORANGE; MINERAL RED; MINIMUM; PARIS RED; RED LEAD; RED LEAD OXIDE; TRILEAD TETRAOXIDE; TRILEAD TETROXIDE; PLUMBO-PLUMBIC OXIDE; PIGMENT RED 105; DILEAD(II) LEAD(IV) OXIDE; O4Pb3; OHS12760; RTECS OG5425000
PRODUCT CODE	SLG-HD
CHEMICAL CLASS	Inorganic metal oxides, lead oxide
CHEMICAL FORMULA	Pb <sub>3</sub> O <sub>4</sub>

**2- COMPOSITION AND INFORMATION ON INGREDIENTS**

CAS Number	EC (EINECS) Number	Chemical Name	Formula	% Lead Oxide
1314-41-6	215-235-6	Lead (IV) oxide	Pb <sub>3</sub> O <sub>4</sub>	100

### **3- HAZARDS IDENTIFICATION**

HAZARD DESCRIPTION	T Toxic O Oxidizing N Dangerous for the environment
INFORMATION PERTAINING TO PARTICULAR DANGERS FOR MAN AND ENVIRONMENT	R61 May cause harm to the unborn child. R62 Possible risk of impaired fertility. R20/22 Harmful by inhalation and if swallowed. R33 Danger of cumulative effects. R8 Contact with combustible material may cause fire. R50/53 Very Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### **4- FIRST AID**

<b>LIMITS OF EXPOSURE</b>	
<b>LONG TIME EXPOSURE</b>	<b>ACUTE, CHRONIC</b>
	<b>FIRST AID</b>
EYE CONTACT : Harmful.	Rinse opened eye for several minutes under running water. Then consult a doctor.
SKIN CONTACT : Harmful.	Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.
INGESTION : Harmful.	Call a physician.
INHALATION : Harmful.	If not breathing perform artificial respiration, if breathing give fresh oxygen. Remove to fresh air and call a physician.
TOXIC TYPE :	-
OTHER ADVISES :	As ANTIDOTE dextrose/water, intravenous; mannitol solution, intravenous; dimercaprol, intramuscular; calcium disodium edetate/procaine, intramuscular; penicillamine, oral.

### **5- FIRE FIGHTING MEASURES**

SUITABLE EXTINGUISHING AGENTS	CO2, extinguishing powder or water spray. Fight larger fires with water spray.
PROTECTIVE EQUIPMENT	Wear self-contained respirator. Wear fully protective impervious suit.

**6- ACCIDENTAL RELEASE MEASURES**

PERSON RELATED SAFETY PRECAUTIONS	Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
MEASURES FOR ENVIRONMENTAL PROTECTION	Do not allow material to be released to the environment without proper governmental permits.
MEASURES FOR CLEANING / COLLECTING	Dispose the material according to item 13.
OTHER PROCEDURES	See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

**7- HANDLING AND STORAGE**

STORING and LOADING PRECAUTIONS	Keep away from eye and skin contact. Place in closed containers. Keep away from food. If contacted wash thoroughly.
HANDLING	Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Open and handle container with care.
OTHERS	Do not inhale and protect from flammable media.

**8- EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 0.5 m per second.

Lead, elemental, and inorganic compounds (as Pb)

	mg(Pb)/m <sup>3</sup>
ACGIH TLV	0.05
Belgium TWA	0.15
Germany TWA	0.1
Netherlands TWA	0.15
Switzerland TWA	0.1
United Kingdom TWA	0.1
Denmark TWA	0.1
Finland TWA	0.1
France TWA	0.15
Hungary STEL	0.04
Poland TWA	0.05
Sweden TWA	0.1
USA PEL	0.05

**Components with limit values that require monitoring at the workplace:**
**LEAD TETROXIDE:**

If any employee is exposed to lead for more than 8 hours per day, use the following formula for the maximum permissible limit (in ug(Pb/m<sup>3</sup>): 400 divided by hours worked in the day.

OSHA TWA 8 hour(s)	50 ug/m <sup>3</sup>
OSHA action level 8 hour(s)	30 ug/m <sup>3</sup>
ACGIH TWA	0.05 mg/m <sup>3</sup>
NIOSH recommended TWA 10 hour(s)	0.10 mg/m <sup>3</sup>

MEASUREMENT METHOD: Particulate filter; Nitric acid/Hydrogen peroxide;  
 Atomic absorption spectrometry; NIOSH III # 7082, also # 7105.

**Personal Protection**

EYES	Safety glasses or goggles. Eye-flushing stations.
SKIN	Rubber gloves and protective clothes, apron, impervious gloves.
INHALATION	Use suitable respirator when high concentrations are present. Refer to 29CFR1910.1025 for regulations on respiratory protection required during exposure to lead and lead compounds.
LOCAL VENTILATION EXITS	Mechanical(General) local ventilation is enough according to the exposure limits.
OTHER PROTECTIVE EQUIPMENTS	The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Store protective clothing separately.

**9- PHYSICAL AND CHEMICAL PROPERTIES**

<b>FORM</b>	Powder, crystals	<b>SOLUBILITY IN WATER</b>	Insoluble
<b>MELTING POINT</b>	500°C	<b>COLOUR</b>	Red
<b>BOILING POINT</b>	1472°C	<b>ODOR</b>	Odorless
<b>FREEZING POINT</b>	N/A	<b>MOLECULAR WEIGHT</b>	685,6
<b>BULK DENSITY</b> ±15 %	1400kg/m <sup>3</sup>	<b>EVAPORATION DENSITY</b>	N/A
<b>SPECIFIC GRAVITY</b>	9,0±0,1	<b>EVAPORATION RATE</b>	N/A
<b>OTHER DATA</b>		<b>pH</b>	7,0±0,1

**10- STABILITY AND REACTIVITY**

<b>STABILITY</b>	Stable under normal conditions
<b>UNSTABILITY REASONS</b>	Decomposes at 477-530°C.
<b>POLIMERIZATION and ITS DANGERS</b>	None.
<b>UNSTABILITY CONDITIONS and MATERIALS</b>	Decomposition will not occur if used and stored according to specifications. Avoid contact with combustible materials. Minimize contact with material.
<b>DANGEROUS PRODUCTS OF DECOMPOSITION</b>	Thermal decomposition products: lead.
<b>INCOMPATIBILITIES</b>	metals, metal carbide, combustible materials, halogens, reducing agents, acids, metal salts  LEAD TETROXIDE: ALUMINUM: Violent reaction. CESIUM ACETYLENE CARBIDE: Explodes on contact @ 350 C. CESIUM HYDROGEN CARBIDE: Incompatible. COMBUSTIBLE MATERIALS: May increase the burning rate or cause ignition on contact; finely divided materials may result in an explosion. DICHLOROMETHYL SILANE: Ignites on impact. FLUORINE: May ignite. GLYCERINE AND PERCHLORIC ACID:

	<p>May form shock-sensitive, explosive compound.</p> <p>GLYCEROL: May ignite.</p> <p>HYDROGEN TRISULFIDE: Violent decomposition.</p> <p>ORGANIC MATERIALS: May increase the burning rate or cause ignition on contact; finely divided materials may result in an explosion.</p> <p>PEROXYFORMIC ACID: Explodes on contact.</p> <p>REDUCING AGENTS: May become combustible or react violently.</p> <p>RUBIDIUM ACETYLENE CARBIDE: Explodes on contact @ 350 C.</p> <p>RUBIDIUM CARBIDE: If warmed will burn.</p> <p>RUBIDIUM HYDROGEN CARBIDE: Incompatible.</p> <p>SILICON + ALUMINUM: Explodes when heated.</p> <p>SELENINYL CHLORIDE: Incandescent reaction.</p> <p>SODIUM: Ignites spontaneously in finely divided state.</p> <p>SULFUR TRIOXIDE: May cause luminous reaction.</p> <p>TITANIUM: Reacts violently when heated.</p> <p>ZINC: Reacts violently with powder.</p> <p>ZIRCONIUM: Explodes violently.</p>
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**11- TOXICOLOGICAL INFORMATION**

Acute toxicity and primary irritant effect.

ON THE SKIN	Irritant to skin and mucous membranes.
ON THE EYE	Powder: irritant effect
SENSITIZATION	No sensitizing effects known.
SUBACUTE TO CHRONIC TOXICITY:	Lead and lead compounds may cause abdominal pain, diarrhea, loss of appetite, metallic taste, nausea, vomiting, lassitude, insomnia, muscle weakness, joint and muscle pain, irritability, headache and dizziness. Red blood cells may be damaged resulting in anemia. Gastritis and injury to the kidneys, liver, male gonads, and central nervous system may also occur.
ADDITIONAL TOXICOLOGICAL INFORMATION:	<p>May cause harm to the unborn child.</p> <p>Possible risk of impaired fertility.</p> <p>To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.</p> <p>EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.</p>

	<p>IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.</p> <p>NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.</p> <p>ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.</p> <p>The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.</p>
<p><b>CARCINOGEN STATUS</b></p>	<p>IARC: Human Inadequate Evidence, Animal Sufficient Evidence, Group 2B (Lead and inorganic lead compounds); ACGIH: A3 -Animal Carcinogen (Lead and inorganic lead compounds) Renal tumors were produced in mice and rats by lead phosphate by subcutaneous and intraperitoneal administration.</p>

**12- ECOLOGICAL INFORMATION**

Do not allow material to be released to the environment without proper governmental permits.

**13- DISPOSAL INFORMATION**

Consult state, local or national regulations for proper disposal. Disposal must be made according to official regulations.

**14- TRANSPORT INFORMATION**

**PROPER SHIPPING NAME** : Oxidizing solid, n.o.s. (Lead tetroxide)-  
UN1479

**HAZARD CLASS** : 5.1

**U.N. NUMBER** : 1479

**PACKING GROUP** : II

**Land transport ADR/RID (cross-border)**

**ADR/RID CLASS** : 5.1

**U.N. NUMBER** : 1479

**ITEM** : 27b

**Maritime transport IMDG:**

**IMDG CLASS** : 5.1

**U.N. NUMBER** : 1479

**PACKING GROUP** : II

**15- REGULATIONS**

T : Toxic

O : Oxidizer.

N: Dangerous for the environment

**EUROPEAN RISK and SAFETY CODES**

- R 61 May cause harm to the unborn child.
- R 62 Possible risk of impaired fertility.
- R 20/22 Harmful by inhalation and if swallowed.
- R 33 Danger of cumulative effects.
- R 8 Contact with combustible material may cause fire.
- R 50/53 Very Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
  
- S 53 Avoid exposure - obtain special instructions before use.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately.
- S 60 This material and/or its container must be disposed of as hazardous waste.
- S 61 Avoid release to the environment. Refer to special instructions safety data sheet.

**16- OTHER INFORMATION**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.