

## **SAFETY DATA SHEET** **SDS0276/M Mercury Spill Kit**

Prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006, Regulation (EC) 1272/2008

The MSDSs which follow cover the three chemical components of the mercury spill kit and should be read carefully before using the kit.

Some PPE is provided in the kit and this should be used. Our separate instructions for use must be followed.

Before using the kit to clean up a spill of mercury users should carry out their own risk assessment.

### **SDS Alloy Wool**

#### **1. Identification of the Substance/Preparation and Company/Undertaking**

##### **1.1 Product Identifier**

Preparation Commercial Name: Lead Wool

##### **1.2 Relevant identified uses and uses advised against**

Used in this context as an easily-handled adsorbent for metallic mercury. Also used as a building material for caulking pipework and for stained glass work.

##### **1.3 Details of the supplier of the safety data sheet**

Darcy Products, details as above

##### **1.4 Emergency contact**

Emergency telephone: 01732 762338

Emergency email: [enqs@darcy.co.uk](mailto:enqs@darcy.co.uk)

#### **2. Hazards Identification:**

##### **2.1 Classification of the substance or mixture in compliance with Regulation (EC) 1272/2008 (CLP Regulations)**

###### **Classification under CLP:**

No harmonized classification

###### **Most important adverse effects:**

Lead exerts its toxic effects in solution as a salt or other complex. Its solubility in water is very low (hence its use in water pipes) but it can be dissolved in strong acids. Lead in solution has a published Ecotoxicity Reference Value (ERV) of between 6.1 and 73.6 microgrammes per litre.

##### **2.2 Label Elements (In compliance with Regulation (EC) 1272/2008 (CLP Regulations))**

**Hazard statements:** None required

**Signal words:** None required

**Hazard pictograms:** None required

**Precautionary statements:** None required

Lead in metallic form is not a significant health hazard. However, in melting or operations generating lead dust, fume or vapour can result in sufficient lead entering the body to be hazardous to health. Oxidation

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products (including lead compounds) may also form on the surface of metallic lead. Lead is heavy and care should be taken when lifting and handling.

### 3. Composition/Information on Ingredients

#### 3.1 Substances

**Chemical identity:** LEAD >99%, traces of tin and antimony

**CAS number:** 7439-92-1

**EINECS number:** 231-100-4

**Contains:** Formula: Pb

**Atomic Weight:** 207.2

#### 3.2 Mixtures

Not applicable

### 4. First Aid Measures

#### 4.1 Description of first aid measures

The measures below are unlikely to be relevant whilst lead is in its solid metallic state. However, they are relevant in the event of exposure to fumes, vapour or dust or oxidation products that may form on the surface of lead sheet.

**Skin contact:** Remove contaminated clothing. Wash skin immediately with soap and water. Seek medical attention if irritation persists

**Eye contact:** Ensure that contact lenses are removed before rinsing eyes. Separate eyelids, wash the eyes thoroughly with water (15 minutes). Seek medical attention if irritation persists

**Ingestion:** Rinse out mouth and give plenty of water. Seek medical attention.

**Inhalation:** Move person into fresh air. Seek medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed

Clinical manifestations of lead poisoning include weakness, irritability, nausea, abdominal pain with constipation, and anaemia.

#### 4.3 Indication of any immediate medical attention and special treatment needed

##### Immediate / special treatment:

Symptoms of poisoning may occur after several hours; seek medical attention

Show this safety data sheet to the doctor in attendance. Eye bathing equipment should be available on the premises.

### 5. Fire-Fighting Measures

#### 5.1 Extinguishing media

**Extinguishing media:** Water spray jet, dry sand.

**Extinguishing media that must not be used for safety reasons:** Full water jet, foam.

#### 5.2 Special hazards arising from the substance or mixture

In case of fire, hazardous combustion gases are formed; lead fumes; lead oxide

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus. Wear protective clothing.

**6. Accidental Release Measures:**

**6.1 Personal precautions, protective equipment, and emergency measures**

**Personal precautions:**

Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

**6.2 Environmental precautions**

Do not discharge into the drains/surface water/groundwater.

In case of entry into waterways, soil or drains, inform the responsible authorities.

**6.3 Methods and material for containment and cleaning up**

**Clean-up procedures:** Collect mechanically (preferably in dry condition). Send in suitable containers for recovery and disposal.

**7. Handling and Storage:**

**Handling requirements:** Provide good ventilation of working area (local exhaust ventilation if necessary). The product is not combustible.

**Storage conditions:** No special measures required. Do not store together with food. Do not store together with animal feedstocks. Do not store with acids or alkalis. Do not store with combustible materials.

**8. Exposure Control and Personal Protection:**

	Limit values – 8 hours mg/m <sup>3</sup>	Limit values – short term mg/m <sup>3</sup>
EU	0.15	
United Kingdom	0.15	
Austria	0.1 inhalable aerosol	0.4 inhalable aerosol
Belgium	0.15	
Denmark	0.05 inhalable aerosol	0.10 inhalable aerosol
France	0.1 inhalable aerosol	
Germany (AGS)	0.1 inhalable aerosol	
Hungary	0.15 inhalable aerosol 0.05 respirable aerosol	0.60 inhalable aerosol 0.2 respirable aerosol
Italy	0.15 inhalable aerosol	
Poland	0.05	
Spain	0.15 inhalable aerosol	
Sweden	0.1 inhalable aerosol 0.15 respirable aerosol	
Switzerland	0.1 inhalable aerosol	0.8 inhalable aerosol

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Exposure pattern	Route	Descriptors	DNEL/DMEL (appropriate unit)	Most sensitive endpoint
Acute - systemic effects	Dermal (mg/kg bw /day)	NA	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA	NA
Acute - local effects	Dermal (mg/cm <sup>2</sup> )	NA	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA	NA
Long-term - systemic effects	Systemic (µg lead /dL blood)	NOAEL = 40 µg/dL	40 µg/dL	Adult neurological function Developmental effect on foetus of pregnant women
		NOAEL = 10 µg/dL	10 µg/dL	
Long-term – local effects	Dermal (mg/cm <sup>2</sup> )	NA	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA	NA

#### Biological action levels, inorganic lead

EU	70 µg/dL
UK	60 µg/dL
Germany (suspended)	40 µg/dL 10 µg/dL (for woman of reproductive capacity)
France	40 µg/dL 30 µg/dL µg/dL (for woman of reproductive capacity)
Spain	70 µg/dL
Italy	60 µg/dL 40 µg/dL (for woman of reproductive capacity)
Denmark	20 µg/dL

DN(M)ELs for workers:

#### Ecological toxicity values

The following Predicted No Effect Concentrations (PNECs) were used to determine the environmental risk of lead metal (sheet):

Exposure pattern	Route	Descriptor	PNEC
Long-term – chronic effects	Freshwater	PNEC (Predicted No Effect Concentration)	3.1 µg Pb/L (dissolved)
Long-term- chronic effects	Marine	PNEC (Predicted No Effect Concentration)	3.5 µg Pb/L (dissolved)
Long-term – chronic effects	Freshwater Sediment	PNEC (Predicted No Effect Concentration)	174.0 mg Pb/kg dw <sup>1</sup> 41.0 mg Pb/kg dw <sup>2</sup>
Long-term – chronic effects	Marine Sediment	PNEC (Predicted No Effect Concentration)	164.0 mg Pb/kg dw
Long-term – chronic effects	Soil	PNEC (Predicted No Effect Concentration)	212.0 mg Pb/kg dw
Long-term – chronic effects	STP (Sewage Treatment Plant)	PNEC (Predicted No Effect Concentration)	0.1 mg Pb/L

<sup>1</sup>: without bioavailability correction; <sup>2</sup>: with bioavailability correction

**The following guidance in this section applies to workers who regularly risk exposure to lead products. The present use is as part of a mercury spillage process, which is usually a very rare, single occasion**

#### Personal Hygiene

Ensure workers follow simple hygiene rules (e.g. do not bite nails and keep them cut short, avoid touching or scratching face with dirty hands or gloves); Ensure workers do not wipe away sweat with hands or arms; Ensure workers use disposable tissues rather than a handkerchief; Prohibit drinking, eating and smoking in production areas, or access to eating and non-production areas in working clothes; Ensure workers wash hands, arms, faces and

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mouths (but preferably shower) and change into clean clothing before entering eating areas; For high exposure workplaces, separate rooms for cleaning hands, removal of clothes, showers and clean clothes may be necessary; Ensure workers handle dirty working clothes with care; Allow no personal belongings to be taken into production areas, or items that have been used in production areas to be taken home. Ensure general shop cleanliness is maintained by frequent washing/vacuuming. Clean every workplace at the end of every shift.

### **Blood lead monitoring**

Set in place a certified monitoring regime which covers all site activities; Define a policy for submitting workers to regular blood lead monitoring, including increased frequency for workers undertaking high-risk jobs and workers with elevated blood lead levels; Ensure all workers have a blood test prior to working on site. Set an "action level" that is typically 5.g/d below the exposure limit deemed to be safe. If the action level is exceeded, appropriate measures are to be taken, to prevent further increases in blood lead. If the safe threshold is exceeded, continue or begin ban on overtime, ensure strict hygiene procedures are followed, undertake detailed inspections to ensure correct use of personal protective equipment, undertake detailed inspections to ensure recommended workplace procedures are followed, move employee to workplace where exposure is expected to be lower or remove from lead environment altogether, further increase blood lead sampling frequency, and continue frequent sampling until results are below the first action level.

### **Personal Protection Equipment**

Respiratory protection: Suitable respiratory protective device recommended if work activity is likely to result in formation of lead fumes, vapours or dust. In case of brief or low level exposure use dust mask or half mask with particle filter P2. Assess the need to wear respiratory protective equipment in production areas. Consider use effective masks accompanied by a compliance policy (ensure proper shaving; ensure workers do not remove RPE in production areas in order to communicate). Where masks are used, employ formal mask cleaning and filter changing strategies.

Hand Protection: Protective gloves. Material of gloves: Neoprene or Leather.

Eye protection: Safety glasses.

Skin protection: Wear protective work clothing. For workers in areas of significant exposure provide sufficient working clothes to enable daily change into clean clothes. In such cases all work clothing should be cleaned by the employer on a daily basis and is not permitted to leave the work site.

### **Environmental Protection**

One or more of the following measures may if necessary be taken to reduce emissions to water:

- Chemical precipitation: used primarily to remove the metal ions
- Sedimentation
- Filtration: used as final clarification step
- Electrolysis: for low metal concentration
- Reverse osmosis: extensively used for the removal of dissolved metals
- Ion exchange: final cleaning step in the removal of heavy metal from process wastewater

One or more of the following measures may if necessary be taken to reduce emissions to air:

- Electrostatic precipitators using wide electrode spacing: Wet electrostatic precipitators:
- Cyclones, but as primary collector Fabric or bag filters: high efficiency in controlling fine particulate (melting): achieve emission values Membrane filtration techniques can achieve
- Ceramic and metal mesh filters. PM10 particles are removed
- Wet scrubbers

Lead removal from treatment works should be at least the minimum default 84% removal used in the CSR. Solid material collected from on-site treatment must be sent for metal recovery or treated as hazardous waste. Waste water treatment sludge must be recycled, incinerated or landfilled and not used as agricultural fertiliser.

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## 9. Physical and Chemical Properties

Physical Form:	Grey-blue metal
Odour:	none
pH of Aqueous Sol'n	Insoluble in water
Viscosity:	n/a
Boiling Point:	>600 deg C
Melting Point:	326 deg C
Flammability:	Not flammable
Autoflammability:	n/a
Explosive Properties:	none
Oxidising Properties:	Not classified as oxidising
Vapour Pressure:	n/a
Specific Gravity:	11.45
Water Solubility	insoluble
Other Solubility	n/a

## 10. Stability and Reactivity

Reactivity: Lead is not a reactive substance and no reactive hazards are expected  
Chemical Stability: Stable under normal conditions

Conditions to Avoid: Strong oxidising reagents  
Hazardous Decomposition Products: not applicable

## 11. Toxicological Information

Lead in massive or sheet form is not a significant health hazard. However the following information is relevant if you swallow any lead or breathe in lead dust, fume or vapour.

### **Toxicokinetic assessment**

Lead is slowly absorbed by ingestion and inhalation and poorly absorbed through the skin. If absorbed, it will accumulate in the body with low rates of excretion, leading to long-term build up. Part of risk management is to take worker blood samples for analysis to ensure that exposure levels are acceptable.

- Acute toxicity** Lead massive metal is not considered to be acutely toxic. It is not easily inhaled or ingested, and if it is accidentally ingested normally passes through the gastrointestinal system without significant absorption into the body. Lead is not easily absorbed through the skin.
- Skin corrosion/irritation** Studies have shown that sparingly soluble inorganic lead compounds are not corrosive or irritating to skin, and this lack of effect is expected also for metallic lead. This conclusion is supported by the lack of reports of irritant effects from occupational settings.
- Serious eye damage/irritation** Studies have shown that sparingly soluble inorganic lead compounds are not corrosive or irritating to eyes, and this lack of effect is expected also for metallic lead. This conclusion is supported by the lack of reports of irritant effects from occupational settings.
- Respiratory/skin sensitisation** There is no evidence that lead causes respiratory or skin sensitisation.
- Germ cell mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.
- Carcinogenicity** There is some evidence that inorganic lead compounds may have a carcinogenic effect, and they have been classified by IARC as probably carcinogenic to humans (Group 2A). However, it is considered that this classification does not apply to lead in articles, given the very low bioavailability of metallic lead. Carcinogenicity studies of lead metal powder have been negative. Epidemiology studies of workers exposed to

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inorganic lead compounds have found a limited association with stomach cancer. IARC has concluded that lead metal is possibly carcinogenic to humans (Group aB).

- g. **Reproductive toxicity** Exposure to high levels of inorganic lead compounds may cause adverse effects on male and female fertility, including adverse effects on sperm quality. Prenatal exposure to inorganic lead compounds is also associated with adverse effects on the development of the unborn child. There is evidence that neurobehavioural development in children is affected by exposure to lead.
- h. **STOT-single exposure** Inorganic lead compounds have generally been found to be of relatively low acute toxicity by ingestion, in contact with skin, and by inhalation, with no evidence of any local or systemic toxicity from such exposures. The bioavailability of lead metal is low and acute lead exposure is not expected to result in acute toxicity effects.
- i. **STOT-repeated exposure** Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Although inhalation and ingestion of lead in massive form are unlikely, poor hygiene practises may result in hand to mouth transfer which maybe significant over a prolonged period of time. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the haemotopoetic (blood) system, kidney function, reproductive function and the central nervous system.
- j. **Aspiration hazard** Lead metal is a solid and aspiration hazards are not expected to occur.

## 12. Ecological Information

**Reliable acute freshwater aquatic toxicity data** (tests conducted with soluble lead salts; all toxicity data reported as dissolved lead):

Test Organisms:	Endpoint	Range of values
Fish: <i>Pimephales promelas</i> , <i>Oncorhynchus mykiss</i>	96h-LC <sub>50</sub>	pH 5.5 – 6.5: 40.8 – 810.0 µg Pb/L pH >6.5 – 7.5: 52.0 – 3,598.0 µg Pb/L pH > 7.5 – 8.5: 113.8 – 3,249.0 µg Pb/L
Invertebrates: <i>Daphnia magna</i> , <i>Ceriodaphnia dubia</i>	48h-LC <sub>50</sub>	pH 5.5 – 6.5: 73.6 – 655.6 µg Pb/L pH >6.5 – 7.5: 28.8 – 1,179.6 µg Pb/L pH > 7.5 – 8.5: 26.4 – 3,115.8 µg Pb/L
Algae: <i>Pseudokirchneriella subcapitata</i> , <i>Chlorella kesslerii</i>	72h-ErC <sub>50</sub> (growth rate)	pH 5.5 – 6.5: 72.0 – 388.0 µg Pb/L pH >6.5 – 7.5: 26.6 – 79.5 µg Pb/L pH > 7.5 – 8.5: 20.5 – 49.6 µg Pb/L

Tests were conducted according to international accepted test guidelines or scientifically acceptable methods.

**Reliable chronic toxicity test results** (tests conducted with soluble lead salts; all toxicity data reported as dissolved lead):

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Test organisms	Range of values (EC <sub>10</sub> , NOEC)
<b>Aquatic freshwater toxicity data</b> LEAD WOOL	
Fish: <i>Oncorhynchus mykiss</i> , <i>Salmo salar</i> , <i>Pimephales promelas</i> , <i>Salvelinus fontinalis</i> , <i>Ictalurus punctatus</i> , <i>Lepomis macrochirus</i> , <i>Salvelinus namaycush</i> , <i>Cyprinus carpio</i> , <i>Acipenser sinensis</i>	17.8 – 1,558.6 µg Pb/L
Invertebrates: <i>Hyalella azteca</i> , <i>Lymnaea palustris</i> , <i>Ceriodaphnia dubia</i> , <i>Lymnaea stagnalis</i> , <i>Philodina rapida</i> , <i>Daphnia magna</i> , <i>Alona rectangular</i> , <i>Diaphanosoma birgei</i> , <i>Chironomus tentans</i> , <i>Brachionus calyciflorus</i> , <i>Chironomus riparius</i> , <i>Baetis tricaudatus</i> .	1.7 – 963.0 µg Pb/L
Algae: <i>Pseudokirchneriella subcapitata</i> , <i>Chlorella kesslerii</i> , <i>Chlamydomonas reinhardtii</i> .	6.1 – 190.0 µg Pb/L
Higher plants: <i>Lemna minor</i>	85.0 – 1,025.0 µg Pb/L
The most sensitive toxicity endpoint was 1.7 µg Pb/L for <i>C. dubia</i> (reproduction) and <i>L. stagnalis</i> (growth). Symptoms of toxicity were effects on survival, growth, reproduction, hatching, (population) growth rate and malformation during development. Toxicity of dissolved lead in freshwater is dependent on the physico-chemistry of the freshwater (mainly dissolved organic carbon, pH, hardness).	
<b>Aquatic marine toxicity data</b>	
Fish: <i>Cyprinodon variegatus</i>	229.6 – 437.0 µg Pb/L
Invertebrates: <i>Mytilus trossulus</i> , <i>Americamysis bahia</i> , <i>Mytilus galloprovincialis</i> , <i>Neanthes arenaceodentata</i> , <i>Strongylocentrotus purpuratus</i> , <i>Paracentrotus lividus</i> , <i>Dendraster excentricus</i> , <i>Tisbe battagliai</i> , <i>Crassostrea gigas</i>	9.2 – 1,409.6 µg Pb/L
Algae: <i>Skeletonema costatum</i> , <i>Phaeodactylum tricorutum</i> , <i>Dunaliella tertiolecta</i> .	52.9 – 1,234.0 µg Pb/L
Higher plants: <i>Champia parvula</i>	11.9 µg Pb/L
The most sensitive toxicity endpoint was 9.2 µg Pb/L for <i>M. trossulus</i> (malformation). Symptoms of toxicity include effects on survival, growth, growth rate, reproduction and malformation during development	
<b>Sediment freshwater toxicity data</b>	
Invertebrates: <i>Tubifex tubifex</i> , <i>Ephoron virgo</i> , <i>Hyalella azteca</i> , <i>Gammarus pulex</i> , <i>Lumbriculus variegatus</i> , <i>Hexagenia limbata</i> , <i>Chironomus tentans</i>	573.0 – 3,390.0 mg Pb/kg dw
The most sensitive toxicity endpoint was 573.0 mg Pb/kg dw for <i>T. tubifex</i> (reproduction). Symptoms of toxicity include effects on survival, growth, and reproduction. Toxicity of lead in freshwater sediment is dependent on the acid volatile sulphide content (AVS) of the freshwater sediment.	
<b>Sediment marine toxicity data</b>	
Invertebrates: <i>Neanthes arenaceodentata</i> , <i>Leptocheirus plumulosus</i>	680.0 – 1,291.0 mg Pb/kg dw
The most sensitive toxicity endpoint was 680.0 mg Pb/kg dw for <i>N. arenaceodentata</i> (growth). Symptoms of toxicity	

include effects on survival, growth, and reproduction	
<b>Terrestrial toxicity data</b> (values were determined in different topsoils with contrasting properties and spiked with soluble lead salts):	
Invertebrates: <i>Folsomia candida</i> , <i>Proisotoma minuta</i> , <i>Sinella curviseta</i> , <i>Eisenia fetida</i> , <i>Eisenia andrei</i> , <i>Dendrobaena rubida</i> , <i>Lumbricus rubellus</i> , <i>Aporrectodea caliginosa</i>	34.0 – 2,445.0 mg Pb/kg dw
Plants: <i>Hordeum vulgare</i> , <i>Zea mays</i> , <i>Echinochloa crus-galli</i> , <i>Lolium perenne</i> , <i>Sorghum bicolor</i> , <i>Triticum aestivum</i> , <i>Oryza sativa</i> and <i>Avena sativa</i> , <i>Raphanus sativus</i> , <i>Lycopersicon esculentum</i> , <i>Lactuca sativa</i> , <i>Cucumis sativus</i> , <i>Picea rubens</i> , <i>Pinus taeda</i>	57.0 – 6,774.0 mg Pb/kg dw
Micro-organisms: denitrification, N-mineralization, nitrification, basal respiration, substrate-induced respiration	97.0 – 7,880.0 mg Pb/kg dw
The most sensitive toxicity endpoint was 34.0 mg Pb/kg for <i>F. candida</i> (reproduction). Symptoms of toxicity include effects on survival, growth, hatching, yield, reproduction, and microbe mediated processes. Toxicity of lead in soils is dependent on 1) the ageing processes and 2) the Cation Exchange Capacity (eCEC) of the soil.	

**Toxicity data for micro-organisms (for STP) (tests conducted with soluble lead salts):**

Test Organisms:	Effect	Range of values (EC <sub>10</sub> , NOEC)
Bacterial populations	Respiration	1.06 - 2.92 mg Pb/L
	Ammonia uptake rate	2.79 - 9.59 mg Pb/L
Protozoan community	Mortality	1.0 - 7.0 mg Pb/L

**Persistence and biodegradability.**

Lead is naturally occurring and ubiquitous in the environment. Lead is obviously persistent in the sense that they do not degrade to CO<sub>2</sub>, water, and other elements of less environmental concern. In the water compartment, lead is rapidly and strongly bound to the suspended solids of the water column. This binding and subsequent settling to the sediment allows for rapid metal removal of lead from the water column. Insignificant remobilization of lead from sediment is expected.

**Bioaccumulative potential.**

Available BCF/BAF data for the aquatic environment show a distinct inverse relationship with the exposure concentration demonstrating that lead is homeostatically regulated by aquatic organisms. A median BAF within environmentally relevant concentrations of 1,552 L/kgww is observed in aquatic organisms. In the soil compartment no bioaccumulation is expected. The BAF's are not significantly affected by the Pb concentration in the soil. A median BAF value for soil dwelling organisms is 0.10 kgdw/kgww. Available information on transfer of Pb through the food chain indicates that lead does not biomagnify in aquatic or terrestrial food chains.

**Mobility in soil and sediment.**

Lead metal (sheet) is sparingly soluble in water and with its relatively high K<sub>d</sub> value, is expected to be absorbed onto soils and sediments.

Typical log K<sub>d</sub>-values of 5.2, 5.7 and 3.8 have been determined for freshwater sediment, marine sediment and soil, respectively.

**Results of PBT and vPvB assessment:**

The PBT and vPvB criteria of Annex XIII to the Regulation do not apply to inorganic substances, such as lead metal (sheet). The criterion for persistence is not applicable for inorganic Pb. Under conditions of a standard EUSES lake Pb meets the criteria for rapid removal from the water column (> 70% in 28 days). Bioaccumulation criterion is not applicable to inorganic substances such as Pb. However, Pb is considered to be toxic, since the most sensitive NOECs, HC5-50 and PNEC values are lower than 10 µg Pb/L.

**13. Disposal Considerations**

**Disposal Methods:** Dispose of in accordance with local regulations

If disposed of after use as a mercury absorbent, then disposal should be considered as for mercury waste.

**14. Transport Information**

This product does not require a classification for transport.

**15. Regulatory Information**

There is specific regulation for this chemical substance: Control of Lead at Work Regulations Act 2002

EU Regulation (EC) No. 1907/2206 (REACH)

Annex XIV	Not listed
Annex XVII	Not listed

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## 16. Other Information

No effective change in hazard/risk parameters has occurred in this or any previous revision of this Data Sheet.

**Disclaimer:** every effort has been made to ensure the accuracy of the above information. However, neither Darcy Products Limited nor any person acting on behalf of Darcy Products Limited can be held responsible for the use which might be made of the above information, or for any omission therein. Users are responsible for carrying out their own risk assessments and taking appropriate precautions.

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## **SDS Calcium hydroxide**

Prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006, Regulation (EC) 1272/2008

### **1. Identification of the Substance/Preparation and Company/Undertaking**

#### **1.1 Product Identifier**

Preparation Commercial Name: **Calcium hydroxide**

#### **1.2 Relevant identified uses and uses advised against**

Used as a surface area enhancer in absorbent preparations. Mixed with sulphur, for the absorption of spilled metallic mercury

#### **1.3 Details of the supplier of the safety data sheet**

Darcy Products, details as above

#### **1.4 Emergency contact**

Emergency telephone: 01732 762338

Emergency email: [engs@darcy.co.uk](mailto:engs@darcy.co.uk)

### **2. Hazards Identification:**

#### **2.1 Classification of the substance or mixture in compliance with Regulation (EC) 1272/2008 (CLP Regulations)**

##### **Classification under CLP:**

Skin Irrit. 2: H315

Eye Dam. 1: H318

STOT SE 3: H335

**Most important adverse effects:** Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

#### **2.2 Label Elements (In compliance with Regulation (EC) 1272/2008 (CLP Regulations))**

##### **Hazard statements:**

H315: Causes skin irritation.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

##### **Signal words:**

Danger

##### **Hazard pictograms:**

GHS05: Corrosion



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GHS07: Exclamation mark



#### **Precautionary statements:**

P261: Avoid breathing dust.

P280: Wear protective gloves/eye protection/face protection.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### **3. Composition/Information on Ingredients**

#### **3.1 Substances**

Calcium hydroxide

Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

#### **3.2 Mixtures**

Not applicable

### **4. First Aid Measures**

#### **4.1 Description of first aid measures**

**Skin contact:** Wash immediately with plenty of soap and water. Consult a doctor.

**Eye contact:** Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Wash out mouth with water. Consult a doctor.

**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a doctor.

#### **4.2 Most important symptoms and effects, both acute and delayed**

**Skin contact:** May be harmful if absorbed through the skin. There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and pain. The eyes may water profusely. The vision may become blurred.

**Ingestion:** May be harmful if swallowed. There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation. There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing. May cause drowsiness and dizziness.

#### **4.3 Indication of any immediate medical attention and special treatment needed**

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Show this safety data sheet to the doctor in attendance. Eye bathing equipment should be available on the premises.

## 5. **Fire-Fighting Measures**

### 5.1 Extinguishing media

Product is non-flammable and non-combustible.

Use Water spray, dry chemical powder, alcohol resistant foam, carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

High temperatures may cause presence of calcium oxide.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes. Use water spray to cool unopened containers.

## 6. **Accidental Release Measures:**

### 6.1 Personal precautions, protective equipment, and emergency measures

Use personal protective equipment. Avoid dust formation Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2 Environmental precautions

Not relevant for small quantities as sold.

If present in bulk, prevent further leakage or spillage if safe to do so.

Do not let bulk product enter drains.

Discharge of very large quantities (>20kg) into environment must be avoided.

### 6.3 Methods and material for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel.

Keep in suitable, closed containers for disposal.

## 7. **Handling and Storage:**

Avoid direct contact with the substance. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

## 8. **Exposure Control and Personal Protection:**

Use personal protective equipment. Avoid dust formation Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Exposure limit:

TWA (8 hours) 5mg per cubic metre atmosphere

Exposure controls:

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**Engineering measures:**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before and after breaks and at the end of workday.

**Respiratory protection (<100g);**

Use an approved dust mask

**Respiratory protection (bulk product):**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection:**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Dispose of contaminated gloves after use in accordance with application laws and good laboratory practises.

Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact - Material: Nitrile rubber. Minimum layer thickness: 0.11mm. Break through time: 8 hrs. Splash

contact - Material: Nitrile rubber. Minimum layer thickness: 0.11mm.

Break through time: 8hrs. If used in solution, or mixed with substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

**Eye protection (bulk product):**

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection (bulk product):**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Environmental (bulk product):**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**9. Physical and Chemical Properties**

Physical Form:	Powder
Colour:	White
Odour:	Earthy
pH of Aqueous Sol'n	12.0
Viscosity:	n/a
Boiling Point:	n/a
Melting Point:	450 deg C
Flash Point:	n/a
Flammability:	n/a
Autoflammability:	n/a
Explosive Properties:	n/a
Oxidising Properties:	Not classified as oxidising
Vapour Pressure:	n/a
Specific Gravity:	2.24
Bulk Density:	n/a
Water Solubility (powder)	slightly soluble
Other Solubility (powder)	n/a

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## 10. Stability and Reactivity

Product is highly stable under normal conditions of use and storage.

Thermal Decomposition: prolonged very high temperature exposure converts the product to calcium oxide

Hazardous Reactions: none known

Conditions to Avoid: exposure to strong acids; exposure to air or moisture

## 11. Toxicological Information

Oral ingestion: ORAL RAT LD50 7,340 mg/kg  
Inhalation: STOT-single exposure INH Based on test data  
Dermal Exposure: Skin corrosion/irritation DRM Based on test data

## 12. Ecological Information

### Ecotoxicity values:

Species	Test	Value	Units
Clarias gariepinus	96H LC50	33.884	mg/l
Daphnia magna (Water flea)	48H EC50	49.1	mg/l
Pseudokirchneriella subcapitata (Green algae)	72H EC50	184.6	mg/l

Mobility: sparingly soluble in water  
Persistence and degradability: benign; used widely in domestic and industrial plant culture  
Bioaccumulation: inorganic; no bioaccumulation potential  
Aquatic toxicity: potentially harmful undispersed suspension only  
Bacterial Toxicity: not known  
WGK Class: not known

## 13. Disposal Considerations

Dispose of materials in accordance with appropriate legislation/regulations.  
Incineration or landfill are appropriate. If disposed of after use as a mercury absorbent, then disposal should be considered as for mercury waste.

## 14. Transport Information

Products are not regulated for any mode of transportation.

## 15. Regulatory Information

Classification in accordance with current CLP regulations:-

Symbols: corrosive, danger  
Risk Phrases: corrosive, irritant, avoid inhalation  
Safety Phrases: avoid skin contact and inhalation. Keep away from children  
Exposure Limits: see Section 8

EU Regulation (EC) No. 1907/2206 (REACH)

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Annex XIV

Not listed

Annex XVII

Not listed

## 16. Other Information

No effective change in hazard/risk parameters has occurred in this or any previous revision of this Data Sheet.

**Disclaimer:** every effort has been made to ensure the accuracy of the above information. However, neither Darcy Products Limited nor any person acting on behalf of Darcy Products Limited can be held responsible for the use which might be made of the above information, or for any omission therein. Users are responsible for carrying out their own risk assessments and taking appropriate precautions.

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## **SDS Sulphur**

Prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006, Regulation (EC) 1272/2008

### **1. Identification of the Substance/Preparation and Company/Undertaking**

#### **1.1 Product Identifier**

Preparation Commercial Name: Sulphur, resublimed

#### **1.2 Relevant identified uses and uses advised against**

Mixed with calcium hydroxide, for the absorption of spilled metallic mercury. Sulphur is also used as a laboratory reagent, for horticulture and as a skin treatment in animals and humans.

#### **1.3 Details of the supplier of the safety data sheet**

Darcy Products, details as above

#### **1.4 Emergency contact**

Emergency telephone: 01732 762338

Emergency email: [engs@darcy.co.uk](mailto:engs@darcy.co.uk)

### **2. Hazards Identification:**

#### **2.1 Classification of the substance or mixture in compliance with Regulation (EC) 1272/2008 (CLP Regulations)**

##### **Classification under CLP:**

Flammable solid, category 2 (Flam. Sol. 2)

Skin corrosion/irritation, category 2 (Skin Irrit. 2).

**Most important adverse effects:** no major adverse effects

#### **2.2 Label Elements (In compliance with Regulation (EC) 1272/2008 (CLP Regulations)**

##### **Hazard statements:**

Flammable solid. Causes skin irritation.

##### **Signal words:**

Warning

##### **Hazard pictograms:**

GHS02: Flammable solid



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GHS07: Exclamation mark



**Precautionary statements:**

Ground/bond container and receiving equipment (bulk product)  
Keep away from heat / sparks/open flames/hot surfaces - No smoking.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF ON SKIN: Wash with soap and water.  
If skin irritation occurs: Get medical advice/attention.

**3. Composition/Information on Ingredients**

**3.1 Substances**

Sulphur, resublimed

**3.2 Mixtures**

Not applicable

**4. First Aid Measures**

**4.1 Description of first aid measures**

Eyes: Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open. In severe cases or if exposure has been great, OBTAIN MEDICAL ATTENTION

Skin: Wash off skin thoroughly with water. Remove contaminated clothing immediately and wash before reuse

Inhalation: Remove from exposure. Keep warm and at rest.

Ingestion: Wash out the patients mouth thoroughly with water.  
OBTAIN MEDICAL ATTENTION URGENTLY.

**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

Show this safety data sheet to the doctor in attendance. Eye bathing equipment should be available on the premises.

**5. Fire-Fighting Measures**

**5.1 Extinguishing media**

Extinguishing Media: Water spray, dry powder or carbon dioxide.  
Unsuitable Media: Do not use water jet.

**5.2 Special hazards arising from the substance or mixture**

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Combustible: Avoid sources of ignition.  
Can form explosive dust clouds. May evolve toxic fumes if involved in a fire.

### 5.3 Advice for firefighters

Bulk product: Evacuate area immediately. Keep upwind. Avoid exposure to toxic vapours and fumes.  
Fire-fighters should wear protective clothing and breathing apparatus.

## 6. Accidental Release Measures:

### 6.1 Personal precautions, protective equipment, and emergency measures

Avoid breathing dust. Use approved personal protective equipment. Keep away from sources of ignition - No Smoking.

### 6.2 Environmental precautions

Presents no major environmental hazard.

### 6.3 Methods and material for containment and cleaning up

Major Spillage (Bulk product) Shovel or vacuum up into container for removal. Carefully remove material from vacuum cleaner and transfer. Wash area down with copious amounts of water.

Minor Spillage Vacuum up into container for removal. Carefully remove material from vacuum cleaner and transfer. Wash area down with copious amounts of water.

## 7. Handling and Storage:

Avoid contact with skin and eyes. Do not breathe dust. Do not allow to contaminate clothing. All transfer systems should be earthed to prevent accumulation of static electricity.  
Ensure Local Exhaust Ventilation maintains dust concentrations below the recommended limits.

Well ventilated, cool, dry storage. Keep well separated from oxidising agents. Keep well separated from combustible materials.

## 8. Exposure Control and Personal Protection:

Respiratory Protection: If process creates significant amounts of dust use L.E.V. or wear suitable dust mask.  
Hand Protection: Wear gloves.  
Eye Protection: Use chemical splash proof glasses or goggles.  
Skin Protection: Avoid contact with skin. If skin contact or contamination of clothing is likely, protective clothing must be worn.  
Special Hazards: No special precautions required.

## 9. Physical and Chemical Properties

Physical Form:	Powder
Colour:	Yellow
Odour:	Characteristic, sulphury
pH of Aqueous Sol'n	Insoluble in water
Viscosity:	n/a
Boiling Point:	444 deg C

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Melting Point:	114 deg C
Flammability:	Flammable
Autoflammability:	n/a
Explosive Properties:	Can form explosive dust clouds-limits: lower 35g/m <sup>3</sup> -upper 400mg/m <sup>3</sup>
Oxidising Properties:	Not classified as oxidising
Vapour Pressure:	n/a
Specific Gravity:	2.00
Water Solubility (powder)	insoluble
Other Solubility (powder)	n/a

#### 10. **Stability and Reactivity**

Reactivity: No data available.

Chemical Stability: Stable under normal conditions

Conditions to Avoid: Hot surfaces, naked flames or other sources of ignition.

Incompatible Materials: Strong oxidising agents.

Hazardous Decomposition Products: Liberates toxic and acidic dense white fumes of sulphur dioxide

#### 11. **Toxicological Information**

Eyes: Presents no significant health hazard to the eyes.

Skin: Causes skin irritation.

LD50 Skin >2000mg/kg Rabbit

Ingestion: Presents no significant hazard by ingestion.

LD50 Oral >5000mg/kg Rat

Inhalation: Presents no significant health hazard by inhalation.

LD50 Inhalation >9.23mg/l Rat (4 hours)

TCLo: Not available

Carcinogenicity: Not considered to be a carcinogen.

Mutagenicity: Not considered to be a mutagen.

Reproductive Effects: None identified.

Other Information: Major health hazard would be in case of fire when toxic sulphur dioxide fumes are evolved.

#### 12. **Ecological Information**

Toxicity: No specific environmental hazard.

LC50 Algal Not available

LC50 Crustacea Not available

LC50 Fish 866mg/l Fish (96 hours)

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Results of PBT & vPvB assessment: Assessment not required.

Other adverse effects: None known at present.

#### 13. **Disposal Considerations**

Disposal Methods: Dispose of in a licensed incinerator. Do not dispose of as domestic waste. Contaminated Packaging Incineration route (small quantities). If disposed of after use as a mercury absorbent, then disposal should be considered as for mercury waste.

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#### 14. Transport Information (Bulk product)

UN Number: 1350

Proper Shipping Name: Sulphur

Transport classes

UN classification 4.1

Subsidiary Risk: None

Transport category 3

ADR Hazard ID: 40

Tunnel Restriction: Code E

Packing Group III



Environment hazards see section 12.

#### 15. Regulatory Information

Classification in accordance with current CLP regulations:-

Signal word: Warning

Hazard Pictograms



Hazard Statements: H228, H315 Flammable solid. Causes skin irritation.

Precautionary Statements P240, P210, P280, P302+P352, P332+P313, P362

Ground/bond container and receiving equipment.

Keep away from heat / sparks/open flames/hot surfaces - No smoking.

Wear protective gloves/protective clothing/eye protection/face protection.

IF ON SKIN: Wash with soap and water. If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

#### **Chemicals (Hazard Information & Packaging) Regulations 2009 (67/548/EEC, 99/45/EC)**

Classification: Irritant(Xi)



Risk & Safety Phrases R38: Irritating to skin.

EU Regulation (EC) No. 1907/2206 (REACH)

Annex XIV Not listed

Annex XVII Not listed

#### 16. Other Information

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