SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 Version 5.0 Revision Date 14.09.2012

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : Lead foil

Product Number : 52-7493
Brand : Rapid
CAS-No. : 7439-92-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Rapid Electronics,
Severalls Lane,
Colchester,
Essex,
CO4 5JS, United Kingdom

Telephone : +44 (0) 1206 751166
Fax : +44 (0) 1206 751188
E-mail address : sales@rapidelec.co.uk

1.4 Emergency telephone number

Emergency Phone # : +44 (0) 1206 751166

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Reproductive toxicity (Category 1A)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Oral (Category 4)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Danger of cumulative effects. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause harm to the unborn child. Possible risk of impaired fertility.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]
Pictogram

Signal word Danger

Hazard statement(s)

H302	Harmful if swallowed.
H332	Harmful if inhaled.
H360Df	May damage the unborn child. Suspected of damaging fertility.

H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P501	Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements: none

Restricted to professional users.

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)

R-phrase(s)

R61	May cause harm to the unborn child.
R48/20/22	Also harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R33	Danger of cumulative effects.
R40	Limited evidence of a carcinogenic effect.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

S-phrase(s)

S36/37	Wear suitable protective clothing and gloves.
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.

Restricted to professional users.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : Pb
Molecular Weight : 207.20 g/mol

Component	Concentration
Lead group entry Annex I	
CAS-No. 7439-92-1 EC-No. 231-100-4	-

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Lead oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Lead group entry Annex I	7439-92-1	CEIL	0.15 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
	Remarks	The occupational exposure limits for lead are set out in the Control of Lead at Work Regulations 2002 (CLAW).		

		The limits are 8-hour TWA concentrations as follows: (a) in relation to lead other than lead alkyls, a concentration of lead in the atmosphere to which any employee is exposed of 0,15 mg/m3; and (b) in relation to lead alkyls, a concentration of lead in the atmosphere to which any employee is exposed of 0,10 mg/m3. When determining lead-in-air concentrations for comparison with the occupational exposure limits, the method referred to in regulation 9 of CLAW described in 'Control of lead at work. Control of Lead at Work Regulations 2002. Approved Code of Practice and Guidance' should be used. Unlike the former lead-in-air standards which could be exceeded in certain specified circumstances, the exposure limits for lead are ceiling limits which not be exceeded when calculated as time-weighted averages over 8 hours. As far as exposure by inhalation is concerned, control is considered adequate when exposure does not exceed the appropriate exposure limit. It should be remembered that other routes of exposure to lead are also important, e.g. ingestion, or contact with the skin where there is exposure to lead alkyls. Substances and processes capable of causing cancer and/or heritable genetic damage		
		TWA	0.15 mg/m3	Europe.Chemical Agents Directive - Annex I: Binding occupational exposure limit values
		Binding		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Lead group entry Annex I	7439-92-1	Lead	0.7 mg/l	Blood	Chemical Agents Directive - Annex II: Binding biological limit values
	Remarks	Biological monitoring must include measuring the blood-lead level (PbB) using absorption spectrometry or a method giving equivalent results., Medical surveillance is carried out if: - exposure to a concentration of lead in air is greater than 0,075 mg/m3, calculated as a time-weighted average over 40 hours per week, or - a blood-lead level greater than 40 µg Pb/100 ml blood is measured in individual workers., Practical guidelines for biological monitoring and medical surveillance must be developed in accordance with article 12, paragraph 2. These include recommendations of biological indicators (e.g. ALAU, ZPP, ALAD) and biological monitoring strategies.			
		Lead	40µg/dl	Blood	UK. Biological monitoring guidance values
		The CLAW Regulations also contains biological limits as additional measures designed to control employees' exposure to lead. For employees exposed to inorganic lead, the limits are based on the concentration of lead in the blood and expressed as micrograms of lead per deciliter of blood (µg/dl). For employees exposed to lead alkyls, the limits are based on the concentration of lead in urine and the values expressed in units of µg Pb/g creatinine., Where the blood-lead concentration for any employee reaches or exceeds the action level, the employer has a statutory duty to determine why and, so far as is reasonably practicable, to take steps to reduce the employee's blood-lead to below the action level. There are no action levels for work involving exposure to lead alkyls., The purpose of the action level is to give the employer early warning			

		that an employee's blood level concentration is approaching the suspension level so that steps can be taken to prevent it being triggered., Action level, In respect of a young person (aged under 18)			
		Lead	50µg/dl	Blood	UK. Biological monitoring guidance values
		The CLAW Regulations also contains biological limits as additional measures designed to control employees' exposure to lead. For employees exposed to inorganic lead, the limits are based on the concentration of lead in the blood and expressed as micrograms of lead per deciliter of blood (µg/dl). For employees exposed to lead alkyls, the limits are based on the concentration of lead in urine and the values expressed in units of µg Pb/g creatinine., Where the blood-lead concentration for any employee reaches or exceeds the action level, the employer has a statutory duty to determine why and, so far as is reasonably practicable, to take steps to reduce the employee's blood-lead to below the action level. There are no action levels for work involving exposure to lead alkyls., The purpose of the action level is to give the employer early warning that an employee's blood level concentration is approaching the suspension level so that steps can be taken to prevent it being triggered., Action level, In respect of any other employee			
		Lead	30µg/dl	Blood	UK. Biological monitoring guidance values
		The CLAW Regulations also contains biological limits as additional measures designed to control employees' exposure to lead. For employees exposed to inorganic lead, the limits are based on the concentration of lead in the blood and expressed as micrograms of lead per deciliter of blood (µg/dl). For employees exposed to lead alkyls, the limits are based on the concentration of lead in urine and the values expressed in units of µg Pb/g creatinine., When the blood-lead (for employees exposed to inorganic lead) or urinary lead (for employees exposed to lead alkyls) concentration of any employee reaches or exceeds the suspension level, the employer will normally remove the employee from working further exposure to lead in order to protect the employee's health., The employer will only allow the employee to resume work involving exposure to lead when the doctor responsible for carrying out medical surveillance on the employee concerned confirms that the employee's blood or urinary lead concentration has dropped back below the suspension levels., Suspension level, In respect of a woman of reproductive capacity			
		Lead	50µg/dl	Blood	UK. Biological monitoring guidance values
		The CLAW Regulations also contains biological limits as additional measures designed to control employees' exposure to lead. For employees exposed to inorganic lead, the limits are based on the concentration of lead in the blood and expressed as micrograms of lead per deciliter of blood (µg/dl). For employees exposed to lead alkyls, the limits are based on the concentration of lead in urine and the values expressed in units of µg Pb/g creatinine., When the blood-lead (for employees exposed to inorganic lead) or urinary lead (for employees exposed to lead alkyls) concentration of any employee reaches or exceeds the suspension level, the employer will normally remove the employee from working further exposure to lead in order to protect the employee's health., The employer will only allow the employee to resume work involving exposure to lead			

		when the doctor responsible for carrying out medical surveillance on the employee concerned confirms that the employee's blood or urinary lead concentration has dropped back below the suspension levels., Suspension level, In respect of a young person (aged under 18)			
		Lead	60µg/dl	Blood	UK. Biological monitoring guidance values
		The CLAW Regulations also contains biological limits as additional measures designed to control employees' exposure to lead. For employees exposed to inorganic lead, the limits are based on the concentration of lead in the blood and expressed as micrograms of lead per deciliter of blood (µg/dl). For employees exposed to lead alkyls, the limits are based on the concentration of lead in urine and the values expressed in units of µg Pb/g creatinine., When the blood-lead (for employees exposed to inorganic lead) or urinary lead (for employees exposed to lead alkyls) concentration of any employee reaches or exceeds the suspension level, the employer will normally remove the employee from working further exposure to lead in order to protect the employee's health., The employer will only allow the employee to resume work involving exposure to lead when the doctor responsible for carrying out medical surveillance on the employee concerned confirms that the employee's blood or urinary lead concentration has dropped back below the suspension levels., Suspension level, In respect of any other employee			
		Lead	25µg/dl	Blood	UK. Biological monitoring guidance values
		The CLAW Regulations also contains biological limits as additional measures designed to control employees' exposure to lead. For employees exposed to inorganic lead, the limits are based on the concentration of lead in the blood and expressed as micrograms of lead per deciliter of blood (µg/dl). For employees exposed to lead alkyls, the limits are based on the concentration of lead in urine and the values expressed in units of µg Pb/g creatinine., Where the blood-lead concentration for any employee reaches or exceeds the action level, the employer has a statutory duty to determine why and, so far as is reasonably practicable, to take steps to reduce the employee's blood-lead to below the action level. There are no action levels for work involving exposure to lead alkyls., The purpose of the action level is to give the employer early warning that an employee's blood level concentration is approaching the suspension level so that steps can be taken to prevent it being triggered., Action level, In respect of a woman of reproductive capacity			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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 applicable laws and good laboratory practices. 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.

Immersion protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested:Dermatril® (Aldrich Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested:Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
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.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Sheet
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	no data available
e)	Melting point/freezing point	no data available
f)	Initial boiling point and boiling range	no data available
g)	Flash point	not applicable
h)	Evaporation rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapour pressure	no data available
l)	Vapour density	no data available
m)	Relative density	no data available
n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available

p)	Autoignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available
t)	Oxidizing properties	no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong acids

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

Genotoxicity in vivo - rat - Inhalation
Cytogenetic analysis

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Lead group entry Annex I)

Reproductive toxicity
Suspected human reproductive toxicant

Reproductive toxicity - rat - Inhalation
Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - rat - Oral
Effects on Newborn: Behavioral.

Reproductive toxicity - mouse - Oral

Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Developmental Toxicity - rat - Inhalation
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Developmental Toxicity - rat - Oral
Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Developmental Toxicity - rat - Oral
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Developmental Toxicity - mouse - Oral
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Potential health effects

Inhalation	Harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
anemia

Additional Information
RTECS: OF7525000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality LOEC - Oncorhynchus mykiss (rainbow trout) - 1.19 mg/l - 96.0 h
	LC50 - Micropterus dolomieui - 2.2 mg/l - 96.0 h
	mortality NOEC - Salvelinus fontinalis - 1.7 mg/l - 10.0 d
Toxicity to daphnia and other aquatic invertebrates	mortality LOEC - Daphnia - 0.17 mg/l - 24 h
	mortality NOEC - Daphnia - 0.099 mg/l - 24 h
Toxicity to algae	mortality EC50 - Skeletonema costatum - 7.94 mg/l - 10 d

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
Bioaccumulation — Oncorhynchus kisutch - 2 Weeks -150 µg/l
Bioconcentration factor (BCF): 12

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3077	IMDG: 3077	IATA: 3077

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead group entry Annex I)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead group entry Annex I)
IATA: Environmentally hazardous substance, solid, n.o.s. (Lead group entry Annex I)

14.3 Transport hazard class(es)

ADR/RID: 9	IMDG: 9	IATA: 9

14.4 Packaging group

ADR/RID: III	IMDG: III	IATA: III

14.5 Environmental hazards

ADR/RID: yes	IMDG Marine pollutant: yes	IATA: yes

14.6 Special precautions for user

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.