

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name Lead, dross Product no.

REACH registration number 01-2119516447-38-0013 (UVCB) Other means of identification

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

Relevant identified uses of the substance or mixture For use only as intermediate. Uses advised against

The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address

Boliden Commercial Box 750 SE-101 35 Stockholm Sweden

Tel +46 8 610 15 00 Fax +46 8 31 55 45 Contact person

E-mail

info.market@boliden.com SDS date 01-06-2015 SDS Version 1.0

1.4. Emergency telephone number

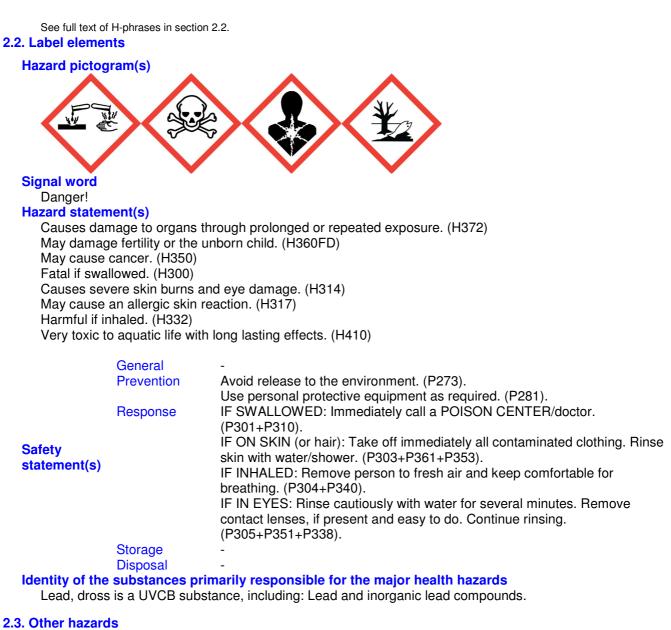
999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service). See section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

STOT RE 1; H372 Repr. 1A; H360FD Carc. 1A; H350 Acute Tox. 2; H300 Skin Corr. 1A; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Acute Tox. 4; H332 Aquatic Chronic 1; H410 Aquatic Acute 1; H400





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Additional	label	ling

Additional warnings

voc

SECTION 3: Composition/information on ingredients

3.1. Substances

NAME:	Lead, dross
IDENTIFICATION NOS.:	CAS-no: 69029-52-3 EC-no: 273-796-2 REACH-no: 01-2119516447-38-0013
CONTENT:	100%
CLP CLASSIFICATION:	Acute Tox. 4, Acute Tox. 1, STOT RE 1, Eye Dam. 1, Skin corr. 1A, Skin Sens. 1, Carc. 1A, Repr.
1A, Aquatic Acute 1, Aquatic Chronic	1 H300, H314, H318, H317, H332, H350, H360FD, H372, H400, H410

(*) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.



3.2. Mixtures

Other informations

Lead, dross is a UVCB substance including (name (EC/CAS)): lead (231-100-4/7439-92-1), copper (231-159-6/7440-50-8), zinc(231-175-3/7440-66-6), tin (231-141-8/7440-31-5), antimony (231-146-5/7440-36-0) and other metals in either alloy form or as compounds such as oxides, sulphides and sulphates.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the injured person into fresh air. Make sure there is always someone with the injured person. Prevent shock by keeping the injured person warm and calm. If the person stops breathing, give mouth-to-mouth resuscitation. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use organic solvents. Seek medical attention if irritation persists.

Eye contact

Remove contact lenses. Flush eyes with plenty of water (20-30 °C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. Contact a doctor at once.

Ingestion

Rinse out mouth and give plenty of water to drink. Contact a doctor immediately and take this safety data sheet or the label from the material with you. Do not induce vomiting. In the event of spontaneous vomiting, hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

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

This product is corrosive and cause irreversible damage to eyes and skin. If dust is inhaled, it can result in damage to lungs.

Typical clinical manifestations of acute lead poisoning include weakness, irritability, asthenia, nausea, abdominal pain with constipation, and anaemia.

Carcinogenic effects: This product contains substances which are considered or proven to be carcinogenic.

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to react to it.

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

Symptoms of poisoning may occur after several hours; therefore medical observation for at least 48 hours after the accident is recommended.

Information to medics

Bring this safety data sheet.

3/11



SECTION 5: Firefighting measures

5.1. Extinguishing media

The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding. Never use water in presence of molten metal. Water expands explosively in contact with molten / liquid metal.

5.2. Special hazards arising from the substance or mixture

Fumes from fire may be toxic, including heavy metal fumes and oxides of sulphur.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and dust. Avoid direct contact with spilled substances. Use personal protective equipment and respiratory protection.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up

Vacuum or sweep up spillage. Collect and put in marked container for disposal. Avoid generating dust. Organic solvents should be avoided.

6.4. Reference to other sections

See section section 8 for protective measures and section 13 with regard to the handling of waste.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handle the material in such a way, that distribution of dust is minimized. Avoid direct contact with the product.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool, dry place, and away from food and feeding stuff.

Storage temperature

No data available.

7.3. Specific end use(s)

Not applicable. This product is a transported isolated intermediate.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

Antimony and compounds (EH40/2005) Long-term exposure limit (8-hour TWA reference period): - ppm | 0.5 mg/m3 Short-term exposure limit (15-minute reference period): - ppm | - mg/m3

Lead and inorganic compounds (EH40/2005) Long-term exposure limit (8-hour TWA reference period): - ppm | 0.15 mg/m3 Short-term exposure limit (15-minute reference period): - ppm | - mg/m3

DNEL / PNEC

DNEL (Lead): 40 µg/dL - Duration: Long term – Systemic effects - Workers - Remarks: Adult neurological function DNEL (Lead): 10 µg/dL - Duration: Long term – Systemic effects - Workers - Remarks: Developmental effect on foetus of pregnant women

PNEC (lead): 3.1 µg Pb/L (dissolved) - Exposure: Freshwater PNEC (lead): 3.5 µg Pb/L (dissolved) - Exposure: Marine water PNEC (lead): 174.0 mg Pb/kg dw - Exposure: Freshwater sediment PNEC (lead): 41.0 mg Pb/kg dw (bioavailibility correction) - Exposure: Freshwater sediment PNEC (lead): 164.2 mg Pb/kg dw - Exposure: Marine water sediment



PNEC (lead): 212.0 mg Pb/kg dw - Exposure: Soil PNEC (lead): 0.1 mg Pb/L - Exposure: Sewage Treatment Plant

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

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 $5 \mu g/dL$ 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.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied. **Exposure limits**

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values above

Appropriate technical measures

Take ordinary precautions when using the product. Avoid inhalation of gas or dust.

Hygiene measures

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 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.

Measures to avoid environmental exposure

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.

Individual protection measures, such as personal protective equipment





Generally

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

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.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: Nitrile rubber. Breakthrough time: > 480 minutes (Class 6)

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic	physical an	d chei	mical proper	ties				
Form	Colour		Odour	рН			Viscosity	Density (g/cm3)
Solid (Pellets, coarse particulates or powder)	yellow to ligh or light grey black		None	Approx.	10 (solutio	n)	Not applicable	5,78
Phase changes								
Melting point (℃)		Boiling	g point (℃)			Vapo	our pressure	(mm Hg)
321			nposes			Negl	ligible	
Data on fire and explo	sion hazard	S						
Flashpoint (°C)		Ignitio	· · ·				ignition (℃)	
Not applicable			ammable			Not a	applicable	
Explosion limits (Vol	%)		ing propertie	S				
Not applicable		Not ap	oplicable					
Solubility								
Solubility in water		n-octa	nol/water co	efficient				
Slightly soluble (0.1- (major constituents)	100 mg/L)	Not ap	oplicable					
9.2. Other information								
Solubility in fat		Additi	onal informat	ion				
Not applicable		Decor	nposition ten	nperature	e: >750 <i>°</i> C			

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactive hazards are expected.

10.2. Chemical stability

The product is stable under the conditions, noted in the section on "Handling and storage".

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

Avoid excessive exposure to heat.

10.5. Incompatible materials Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.



10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components, taking into account the elemental and mineralogical composition of representative samples and the toxicity of the various metal species.

Acute toxicity

Based upon consideration of its components, this grade of lead, dross is expected to be acutely toxic by ingestion and inhalation, and is classified as Acute Toxicity Category 2 for ingestion and as Acute Toxicity Category 4 for inhalation.

Skin corrosion/irritation

Causes severe skin burns and eye damage. This grade of lead, dross is expected to be corrosive to skin based upon the concentration of sodium hydroxide contained in a representative sample.

Serious eye damage/irritation

This grade of lead, dross is expected to be corrosive to eyes based upon the concentration of sodium hydroxide contained in a representative sample.

Respiratory or skin sensitisation

This grade of lead, dross is not expected to be skin sensitiser or respiratory sensitiser, based upon consideration of its components.

Germ cell mutagenicity

This grade of lead, dross is not expected to be a germ cell mutagen, based upon consideration of its components.

Carcinogenicity

This grade of lead, dross is considered to be a carcinogen due to the presence of cadmium oxide in representative samples at levels above the threshold for classification.

Reproductive toxicity

This grade of lead, dross is considered to be a reproductive toxin due to the presence of lead and lead compounds in representative samples at levels above the threshold for classification.

STOT-single exposure

This grade of lead, dross is considered to be acutely toxic and no additional specific target organ effects have been identified as a result of acute exposure.

STOT-repeated exposure

This grade of lead, dross contains lead and lead compounds, which are cumulative poisons and may be absorbed into the body through ingestion or inhalation. Lead and 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.

Aspiration hazard

This grade of lead, dross is a solid and aspiration hazards are not expected to occur.

Long term effects

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.

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders. Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Carcinogenic effects: This product contains substances which are considered or proven to be carcinogenic. The danger may lie in inhalation, skin contact or ingestion.

Tissue damaging effects: This product contains substances which are corrosive. If vapour or aerosols are in haled, it can result in damage to lungs, irritation and burns in the respiratory organs as well as coughing. Corrosive substances cause irreversible damage to eyes and acid burns to skin.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a



foreign body and will try to destroy it.

Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

The toxicity of this grade of lead, dross has been estimated using calculation methods that take into account the elemental and mineralogical composition of representative samples and the toxicity of the various metal species. On this basis, this grade of lead, dross is considered to be acutely and chronically very toxic to the aguatic environment.

Substance	Species	Test	Test duration	Result
Lead dross	Crustacean	EC50	48 h	≤ 1 mg/L
Lead dross	Algea	EC50	72 h	≤ 1 mg/L

12.2. Persistence and degradability

Lead, dross contains inorganic substances that do not degrade. The fate and distribution of the separate metals present are likely to be the same as for the elements. Biodegradation is not relevant for inorganic substances.

12.3. Bioaccumulative potential

Lead, dross contains inorganic lead and lead compounds which are considered to be bioaccumulating in the environment, and may accumulate in aquatic and terrestrial plants and animals.

12.4. Mobility in soil

Lead, dross contains inorganic lead and lead compounds which are sparingly soluble and are expected to be adsorbed onto soils and sediments. Mobility is expected to be low.

12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code 06 04 05, 10 04 05 Specific labelling

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

is product is covered by the convention 14.1 – 14.4 ADB/BID	ons on dangerous goods.
14.1. UN number	3290
14.2. UN proper shipping name	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S. (LEAD DROSS)
14.3. Transport hazard class(es)	6.1
14.4. Packing group	ll
Notes	
Tunnel restriction code	D/E
IMDG	
UN-no.	3290
Proper Shipping Name	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S. (LEAD DROSS)



Class	6.1
PG*	II
EmS	F-A, S-B
MP**	Yes
Hazardous constituent	-

IATA/ICAO

UN-no.	
Proper Shipping Name	•
Class	
PG*	

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

14.6. Special precautions for user

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not transported in bulk

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. Only for industrial use. Pregnant and nursing women must not be exposed to the effects of this product. The risk, and possible technical precautions or design of the workplace to avoid such risk, must therefore be evaluated.

Demands for specific education

Additional information

Sources

EC regulation 1907/2006 (REACH)

EC Regulation 1272/2008 (CLP)

DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives

REGULATION (EC) No 1013/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2006 on shipments of waste

COUNCIL DIRECTIVE 94/33/EC of 22 June 1994 on the protection of young people at work

COUNCIL DIRECTIVE 92 / 85 / EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding

EH40/2005 Workplace exposure limits

15.2. Chemical safety assessment



A Chemical Safety Assessment has not been carried out for this product.

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

- H300 Fatal if swallowed.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H332 Harmful if inhaled.
- H350 May cause cancer.
- H360 May damage fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

Emergency numbers

Austria: Poison Control Centre Emergency helpline +43 1 406 43 43, 112 Belgium: 070 - 245 245 Bulgaria: +359 2 9154 409 Czech Republic: Toxikologické informační středisko Telefon: +420 224 919 293, +420 224 915 402 Denmark: Kontakt Giftlinien på tlf.nr.: 82 12 12 12 (åbent 24 timer i døgnet). Estonia: 112, 16662, ((+372) 626 93 90) Finland: 09-4711/Myrkytystietokeskus tai suora numero 09-471977 Myrkytystietokeskus/HUS, Tukholmankatu 17, 00029 HUS (Helsinki) 112 France: ORFILA (INRS) : + 33 (0)1 45 42 59 59. 24 heures sur 24 et 7 jours sur 7 Germany: Giftnotruf Berlin, Emergency telephone: +49 30 19240 (Tag und Nacht) Greece: +30 10 779 3777 Hungary: Telefon: 06-80-20-11-99 Iceland: Neyðarlínan: Sími 112. Eitrunarmiðstöð Landsspítalans. Sími: 543 2222. Ireland: +353 1 8379964 Italy: Centro antiveleni di Roma - Policlinico Umberto I tel. 06-49978000 Latvia: +371 704 2468 Lithuania: Visuomenės sveikatos centrams +370 5 236 20 52 arba +370 687 53378 Malta: 2425 0000 Netherlands: 30-2748888 Norway: Giftinformasjonssentralen på tlf.nr.: 22 59 13 00, 113 Poland: +48 58301 65 16 / +48 58 349 2831 Portugal: Em caso de intoxicacao, ligue 808 250 143 Romania: +40 21 3183606 Slovakia: +421 2 54 77 4166 Slovenia: + 386 41 650500 Spain: Servicio de Información Toxicológica Teléfono: + 34 91 562 04 20 (solo emergencias toxicológicas) Información en español (24h/365 días) Sweden: 112, 08-331231 (vardagar kl 9-17) United Kingdom: 999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service)



Date of last essential change (First cipher in SDS version)

Date of last minor change (Last cipher in SDS version)

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