

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## Sealed Radioactive Source – Cobalt-60 A49589

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

#### 1.1 Product identifier

**Product name:** Sealed Radioactive Source – Cobalt-60  
**Product number:** A49589  
**SDS number:** 906039  
**CAS No.:** 10198-40-0  
**Chemical symbol:** Co-60 or  $^{60}\text{Co}$   
**Index No.:**

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

**Identified use(s):** Laboratory chemicals. Manufacture of substances.  
**Uses advised against:** Follow supplier's recommendations on correct use of the product.

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

**Supplier:** Philip Harris Manufacturing Limited.  
Unit 72, Gazelle Road  
Weston Industrial Estate  
Weston-super-Mare  
BS24 9BJ

**Telephone:** +44 (0)1934 413 606  
**Fax:** +44 (0)1934 626 421  
**E-mail:** [sdsinfo@philipharrismanufacturing.co.uk](mailto:sdsinfo@philipharrismanufacturing.co.uk)

#### 1.4 Emergency telephone number

**In case of emergency, call:** +44 (0)1934 413 606 (Mon – Fri, 08:30 – 17:00 UK time)

### SECTION 2: Hazard Identification

#### 2.1 Classification of the substance or mixture

##### 2.1.1. Classification according to Regulation (EC) No. 1272/2008 (CLP)

Skin irritation (Category 2), H315  
Respiratory sensitisation (Category 1), H334

For the full text of the H-Statements mentioned in this Section, see Section 16.

##### 2.1.2. Classification according to Directive 67/548/EEC & Directive 1999/45/EC

Xi	Irritant	R36/37/38
		R42

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## 2.2 Label elements

### 2.2.1. Label according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictogram(s):



Signal Word: None

Hazard Statement(s):  
H304 – May be fatal if swallowed and enters airways  
H312 – Harmful in contact with skin  
H317 – May cause an allergic skin reaction

Precautionary Statement(s): None

Supplemental Hazard information (EU): None.

## 2.3 Other hazards

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical name	% w/w	CAS No.	EC No.	Index No.	Classification (Regulation (EC) No. 1272/2008 (CLP))	Classification (Directive 67/548/EEC)
No chemical mixture in the product.						

See Section 16 for full description of R phrases and H statements.

## SECTION 4: First Aid Measures

### 4.1 Description of first aid measures

**INHALATION:** Remove person to fresh air and keep comfortable for breathing. Keep warm and at rest. If irritation persists or if you feel unwell, obtain immediate medical attention.

**SKIN CONTACT:** Do not keep near the body for any length of time. If rash/allergic reaction occurs seek medical advice immediately.

**EYE CONTACT:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing, making sure to rinse under eyelids. Obtain immediate medical attention.

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**INGESTION:** Do not induce vomiting. Provided the patient is conscious, rinse mouth out with water and give 200-300 mL of water to drink. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and / or in section 11

## 4.3 Indication of any immediate medical attention and special treatments needed:

In case of accident or if you feel unwell, seek medical advice immediately. If breathing is laboured, oxygen should be administered by qualified personnel.

## SECTION 5: Fire-fighting Measures

### 5.1 Extinguishing Media

**Suitable extinguishing media:** Water spray, CO<sub>2</sub>, sand, dry powder, alcohol-resistant foam

**Unsuitable extinguishing media:** Do not use water jet.

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

Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary

## SECTION 6: Accidental Release Measures

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

#### 6.1.1 For non-emergency personnel

Eliminate sources of ignition. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours/spray. Wear suitable personal protective equipment. Wear appropriate respirator when ventilation is inadequate (See Section 8).

#### 6.1.2 For emergency responders

Keep unnecessary personnel away. Wear suitable protective clothing (See Section 8). Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse.

### 6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

### 6.3 Methods and materials for containment and clearing up

#### 6.3.1 For containment

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Stop the leak if it is safe to do so. Contain the spillage with sand, earth or any suitable adsorbent material.

## 6.3.2 For cleaning up

To clean carefully any foreign matter from the outside of the source for most of sources use a cotton wool or tissue swab lightly moistened with water, ethanol or acetone.

## 6.3.3 Other advice

Do not let product enter the drains.

## 6.4 Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for waste disposal.

## SECTION 7: Handling and Storage

### 7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Workplace exposure limits

Substance	CAS No.	LTEL (8 hr TWA)		STEL (15 min)		Comments
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Contains no substances with occupational exposure limit values.						

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

General educational / industrial hygiene practice.

#### 8.2.2 Personal protection

##### Eye protection:

Goggles or safety glasses with side shields giving complete protection to eyes (EN 166).

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<b>Skin protection:</b>	Protective Clothing
<b>Hand protection:</b>	Chemical-resistant gloves conforming (EN 374). Nitrile rubber gloves are recommended for normal use. Butyl rubber gloves are recommended if the contents of the generator are released. Contact glove supplier to confirm suitable glove material, thickness and breakthrough times.
<b>Other:</b>	Long sleeve protective clothing.
<b>Respiratory protection:</b>	Not normally required. Dust mask if conditions are dusty.
<b>Thermal hazards:</b>	Not applicable.
<b>8.2.3 Environmental exposure controls</b>	Inform environmental manager of all incidents involving this product.

## SECTION 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance:</b>	Form: Cobalt Metal
<b>Odour:</b>	No data available
<b>Odour threshold:</b>	No data available.
<b>pH:</b>	No data available
<b>Melting/freezing point:</b>	No data available
<b>Initial boiling point and boiling range:</b>	No data available
<b>Flash point:</b>	No data available
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid; gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	No data available
<b>Vapour pressure:</b>	No data available
<b>Vapour density:</b>	No data available
<b>Relative density:</b>	No data available
<b>Solubility(ies):</b>	No data available
<b>Partition coefficient: n-octanol/water:</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	No data available
<b>Explosive properties:</b>	No data available
<b>Oxidising properties:</b>	No data available

### 9.2 Other information

None known.

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## SECTION 10: Stability and Reactivity

10.1	Reactivity	No data available
10.2	Chemical stability	Stable under recommended storage conditions.
10.3	Possibility of hazardous reactions	No data available
10.4	Conditions to avoid	No data available
10.5	Incompatible materials	No data available
10.6	Hazardous decomposition products	No data available

## SECTION 11: Toxicological Information

### 11.1 Information on toxicological effects

Acute toxicity	No data available
Skin corrosion/irritation	Skin – May cause irritation to the skin if exposed for any length of time.
Serious eye damage/irritation	Eyes – May cause irritation to the eyes if exposed for any length of time.
Skin sensitisation	Skin – May cause sensitisation to the skin if exposed for any length of time.
Respiratory sensitisation	Respiratory – Will cause sensitisation to the respiratory system if exposed to it.
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity – single exposure	No data available
Specific Target Organ Toxicity – repeated exposure	No data available
Aspiration hazard	No data available

### Information on likely routes of exposure

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation
Skin contact	May be harmful if absorbed through skin. Causes skin irritation
Eye contact	May be harmful. Causes eye irritation
Ingestion	Harmful if swallowed

Symptoms related to the physical, chemical and toxicological characteristics No data Available

Mixture versus substance Information No data Available

Other information To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## SECTION 12: Ecological Information

12.1	Toxicity	No data available
12.2	Persistence and degradability	No data available
12.3	Bioaccumulative potential	No data available
12.4	Mobility in soil	No data available
12.5	Results of PBT and vPvB assessment	No data available
12.6	Other adverse effects	No data available

## SECTION 13: Disposal Considerations

13.1	Waste treatment methods	Offer surplus and non-recyclable solutions to a licensed disposal company.
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## SECTION 14: Transport Information

### ADR

14.1	UN Number	UN 2910
14.2	UN Proper shipping name	Sealed Radioactive Source
14.3	Transport hazard class(es)	Class 7
14.4	Packing group	No data available
14.5	Environmental hazards	No
14.6	Special precautions for the user	Do not expose to skin for any length of time

### ADN

14.1	UN Number	UN 2910
14.2	UN Proper shipping name	Sealed Radioactive Source
14.3	Transport hazard class(es)	Class 7
14.4	Packing group	No data available
14.5	Environmental hazards	No
14.6	Special precautions for the user	Do not expose to skin for any length of time

### RID

14.1	UN Number	UN 2910
14.2	UN Proper shipping name	Sealed Radioactive Source
14.3	Transport hazard class(es)	Class 7
14.4	Packing group	No data available
14.5	Environmental hazards	No
14.6	Special precautions for the user	Do not expose to skin for any length of time

### IATA/ICAO

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14.1	UN Number	UN 2910
14.2	UN Proper shipping name	Sealed Radioactive Source
14.3	Transport hazard class(es)	Class 7
14.4	Packing group	No data available
14.5	Environmental hazards	No
14.6	Special precautions for the user	Do not expose to skin for any length of time

## IMDG

14.1	UN Number	UN 2910
14.2	UN Proper shipping name	Sealed Radioactive Source
14.3	Transport hazard class(es)	Class 7
14.4	Packing group	No data available
14.5	Environmental hazards	No
14.6	Special precautions for the user	Do not expose to skin for any length of time
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	No data available

## SECTION 15: Regulatory Information

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

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 1907/2006 as amended. The product has been classified in accordance with Regulation (EC) No. 1272/2008 (CLP), Directive 67/548/EEC & Directive 1999/45/EC.

### 15.2 Chemical Safety Assessment

A chemical safety assessment is not required and has not been carried out.

## SECTION 16: Other Information

### Full text of relevant R-phrases and/or H-statements:

<b>Hazard Statement(s):</b>	H315 – Causes skin irritation H304 – May be fatal if swallowed and enters airways H312 – Harmful in contact with skin H317 – May cause an allergic skin reaction
<b>Supplemental Hazard information (EU):</b>	None.
<b>Risk phrase(s):</b>	None



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## Abbreviations:

CAS:	Chemical Abstracts Service;
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC <sub>50</sub> :	Effective Concentration 50%
EL <sub>50</sub> :	Effective Loading rate 50%
IC <sub>50</sub> :	Inhibitory Concentration 50%
LC <sub>50</sub> :	Lethal Concentration 50%
LD <sub>50</sub> :	Lethal Dose 50%
LL <sub>50</sub> :	Lethal Loading rate 50%
LCLo:	Lowest lethal concentration
LOEL:	Lowest Observed Effect Level
NOEL:	No Observed Effect Level
PBT:	Persistent, Bioaccumulative and Toxic.
vPvB:	Very Persistent and Very Bioaccumulative.

## References:

Supplier's Safety Data Sheets for ingredients  
ECHA disseminated REACH dossiers  
ECHA Classification & Labelling Inventory  
Approved Classification and Labelling Guide (Sixth edition)  
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP)  
Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP)

## Disclaimer:

THE INFORMATION PRESENTED HEREIN IS BELIEVED TO BE ACCURATE, BUT IS NOT WARRANTED TO BE, WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM, IN ADVANCE OF NEED, THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

## Version history:

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<b>Issue date of previous version:</b>	01/07/2005
<b>Sections changed from previous version:</b>	All