# **SAFETY DATA SHEET**

# C4 Heating System Leak Sealer 500ml

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

#### 1.1. Product identifier

Product name C4 Heating System Leak Sealer 500ml

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

Identified uses Leak sealer

Uses advised against Not suitable for use in PRIMATIC single feed cylinders.

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

Supplier CALEFFI S.p.A.

S.R. 229, N.25

Italy / 28010 / Fontaneto d'Agogna (NO)

T: +39 0322 8491 F: +39 0322 863305 E: SDS@Lettergold.co.uk

Manufacturer Lettergold Water Treatment Solutions LLP

Unit 4 Hammond Close

Newmarket CB8 0AZ

T: +44 1638 666 888 F: +44 1638 666 999 E: SDS@Lettergold.co.uk

## 1.4. Emergency telephone number

**Emergency telephone** +44 (0)845 880 60 50

### SECTION 2: Hazards identification

## 2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Sens. 1 - H317

Environmental hazards Not Classified

## 2.2. Label elements

#### Hazard pictograms



Signal word Warning

**Hazard statements** H317 May cause an allergic skin reaction.

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**Precautionary statements** P102 Keep out of reach of children.

P261 Avoid breathing vapour/ spray.

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

P302+P352 IF ON SKIN: Wash with plenty of water.

P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P501 Dispose of contents/ container in accordance with national regulations.

Contains 1,2-Benzisothiazol-3(2H)-one, 2-Methyl-2H-isothiazol-3-one

Supplementary precautionary statements

P272 Contaminated work clothing should not be allowed out of the workplace.

P321 Specific treatment (see medical advice on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

## 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

# 1,2-Benzisothiazol-3(2H)-one <0.025%

CAS number: 2634-33-5 EC number: 220-120-9

M factor (Acute) = 1

#### Classification

Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Acute 1 - H400

2-Methyl-2H-isothiazol-3-one <0.025%

CAS number: 2682-20-4 EC number: 220-239-6

M factor (Acute) = 10 M factor (Chronic) = 1

#### Classification

Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 2 - H330 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1A - H317 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

The full text for all hazard statements is displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

General information Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical

personnel.

**Inhalation** Move affected person to fresh air and keep warm and at rest in a position comfortable for

breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

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Ingestion Rinse mouth thoroughly with water. Move affected person to fresh air and keep warm and at

rest in a position comfortable for breathing. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious

person.

**Skin contact** It is important to remove the substance from the skin immediately. In the event of any

sensitisation symptoms developing, ensure further exposure is avoided. Remove

contamination with soap and water or recognised skin cleansing agent. Get medical attention

if symptoms are severe or persist after washing.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide

apart. Continue to rinse for at least 10 minutes.

**Protection of first aiders**First aid personnel should wear appropriate protective equipment during any rescue.

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

**General information** See Section 11 for additional information on health hazards. The severity of the symptoms

described will vary dependent on the concentration and the length of exposure.

**Inhalation** The product is considered to be a low hazard under normal conditions of use. Prolonged

inhalation of high concentrations may damage respiratory system.

**Ingestion** Gastrointestinal symptoms, including upset stomach.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact

may cause dryness of the skin.

**Eye contact** May cause temporary eye irritation.

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

Specific treatments No special treatment required.

## SECTION 5: Firefighting measures

# 5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-

extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing

media

Do not use water jet as an extinguisher, as this will spread the fire.

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

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion

products

Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Carbon dioxide (CO2). Carbon monoxide (CO). Nitrous gases (NOx).

# 5.3. Advice for firefighters

Protective actions during

firefighting

Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak.

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Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

#### SECTION 6: Accidental release measures

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

Personal precautions Keep unnecessary and unprotected personnel away from the spillage. Wear protective

clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage.

#### 6.2. Environmental precautions

**Environmental precautions** Avoid discharge to the aquatic environment.

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

**Methods for cleaning up** Wear protective clothing as described in Section 8 of this safety data sheet. Reuse or recycle

products wherever possible. Absorb spillage to prevent material damage. Flush contaminated area with plenty of water. Dispose of contents/container in accordance with national

regulations. Wash thoroughly after dealing with a spillage.

#### 6.4. Reference to other sections

**Reference to other sections** For personal protection, see Section 8. For waste disposal, see Section 13.

#### SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Usage precautions Keep out of the reach of children. Read and follow manufacturer's recommendations. Keep

away from food, drink and animal feeding stuffs. Wear protective clothing as described in Section 8 of this safety data sheet. Handle all packages and containers carefully to minimise

spills. Keep container tightly sealed when not in use.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

Wash at the end of each work shift and before eating, smoking and using the toilet. Change

work clothing daily before leaving workplace.

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

Storage precautions Store away from incompatible materials (see Section 10). Store in tightly-closed, original

container in a dry, cool and well-ventilated place. Store at temperatures above 5°C.

Storage class Unspecified storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

# SECTION 8: Exposure controls/Personal protection

## 8.1. Control parameters

**Ingredient comments** No exposure limits known for ingredient(s).

#### 8.2. Exposure controls

# Protective equipment





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Appropriate engineering

controls

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. The following protection should be worn: Chemical splash goggles.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.

Environmental exposure controls

Not regarded as dangerous for the environment.

#### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Appearance Emulsion.

Colour Off-white.

Odour Mild.

Odour threshold Not available.

**pH** pH (concentrated solution): 7-8

Melting pointNot available.Initial boiling point and rangeNot available.Flash pointNot available.Evaporation rateNot available.

Upper/lower flammability or

explosive limits

Not available.

Vapour pressure Not available.

Vapour density Not available.

Relative density 1

Solubility(ies) Miscible with water.

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Partition coefficientNot available.Auto-ignition temperatureNot available.Decomposition TemperatureNot available.ViscosityNot applicable.

**Explosive properties** Not considered to be explosive.

Oxidising properties Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information No information required.

## SECTION 10: Stability and reactivity

## 10.1. Reactivity

**Reactivity** See the other subsections of this section for further details.

10.2. Chemical stability

Stable at normal ambient temperatures and when used as recommended. Stable under the

prescribed storage conditions.

#### 10.3. Possibility of hazardous reactions

Possibility of hazardous

reactions

No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid No specific material or group of materials is likely to react with the product to produce a

hazardous situation.

## 10.6. Hazardous decomposition products

Hazardous decomposition

products

Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

#### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD50) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD<sub>50</sub>) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC50) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

**Respiratory sensitisation** Based on available data the classification criteria are not met.

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Skin sensitisation

Skin sensitisation May cause skin sensitisation or allergic reactions in sensitive individuals.

Germ cell mutagenicity

**Genotoxicity - in vitro**Based on available data the classification criteria are not met.

Carcinogenicity

**Carcinogenicity** Based on available data the classification criteria are not met.

IARC carcinogenicity

Contains a substance which may be potentially carcinogenic. IARC Group 3 Not classifiable

as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity -

Based on available data the classification criteria are not met.

development

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure 
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information No specific health hazards known. The severity of the symptoms described will vary

dependent on the concentration and the length of exposure.

**Inhalation** The product is considered to be a low hazard under normal conditions of use. Prolonged

inhalation of high concentrations may damage respiratory system.

**Ingestion** Gastrointestinal symptoms, including upset stomach.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact

may cause dryness of the skin.

**Eye contact** May cause temporary eye irritation.

Route of exposure Ingestion Inhalation Skin and/or eye contact

**Target organs** No specific target organs known.

Medical considerations Skin disorders and allergies.

Toxicological information on ingredients.

Polydimethylsiloxane

**Toxicological effects** Based on available data the classification criteria are not met.

1,2-Benzisothiazol-3(2H)-one

Acute toxicity - oral

Notes (oral LD₅o) Acute Tox. 4 - H302 Harmful if swallowed. cATpE: Converted Acute Toxicity Point

Estimate.

ATE oral (mg/kg) 500.0

Skin corrosion/irritation

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Animal data Skin Irrit. 2 - H315 Causes skin irritation.

Serious eye damage/irritation

**Serious eye** Eye Dam. 1 - H318 Causes serious eye damage.

damage/irritation

Skin sensitisation

**Skin sensitisation** Skin Sens. 1 - H317 May cause an allergic skin reaction.

2-Methyl-2H-isothiazol-3-one

Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> 120.0

mg/kg)

Species Rat

Notes (oral LD<sub>50</sub>) Toxic if swallowed.

ATE oral (mg/kg) 120.0

Acute toxicity - dermal

Acute toxicity dermal (LD50 242.0

mg/kg)

**Species** Rat

Notes (dermal LD<sub>50</sub>) Toxic in contact with skin.

ATE dermal (mg/kg) 242.0

Acute toxicity - inhalation

Acute toxicity inhalation

(LC<sub>50</sub> dust/mist mg/l)

0.11

Species Rat

Notes (inhalation LC50) Fatal if inhaled.

ATE inhalation (vapours

mg/l)

0.11

ATE inhalation

0.11

(dusts/mists mg/l)

Skin corrosion/irritation

Animal data Corrosive to skin.

Serious eye damage/irritation

Serious eye

Corrosive to skin. Corrosivity to eyes is assumed.

damage/irritation

Skin sensitisation

Skin sensitisation Sensitising.

SECTION 12: Ecological information

**Ecotoxicity** Not regarded as dangerous for the environment. However, large or frequent spills may have

hazardous effects on the environment.

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## 12.1. Toxicity

**Toxicity** Based on available data the classification criteria are not met.

#### Ecological information on ingredients.

## Polydimethylsiloxane

**Toxicity** Based on available data the classification criteria are not met.

1,2-Benzisothiazol-3(2H)-one

**Toxicity** Aquatic Acute 1 - H400 Very toxic to aquatic life.

Acute aquatic toxicity

**LE(C)**<sub>50</sub>  $0.1 < L(E)C50 \le 1$ 

M factor (Acute) 1

2-Methyl-2H-isothiazol-3-one

**Toxicity** Aquatic Acute 1 - H400 Very toxic to aquatic life.

Acute aquatic toxicity

**LE(C)**<sub>50</sub>  $0.01 < L(E)C50 \le 0.1$ 

M factor (Acute) 10

Acute toxicity - fish LC<sub>50</sub>, 96 hours: 6.0 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic

invertebrates

EC₅o, 48 hours: 1.68 mg/l, Daphnia magna

Acute toxicity - aquatic

plants

EC₅o, 72 hours: 0.157 mg/l, Pseudokirchneriella subcapitata

Chronic aquatic toxicity

**NOEC** 0.01 < NOEC ≤ 0.1

**Degradability** Non-rapidly degradable

M factor (Chronic) 1

### 12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

## Ecological information on ingredients.

## Polydimethylsiloxane

Persistence and degradability

The degradability of the product is not known.

1,2-Benzisothiazol-3(2H)-one

Persistence and degradability

The degradability of the product is not known.

2-Methyl-2H-isothiazol-3-one

# C4 Heating System Leak Sealer 500ml

Persistence and degradability

The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not available.

Ecological information on ingredients.

Polydimethylsiloxane

Bioaccumulative potential No data available on bioaccumulation.

1,2-Benzisothiazol-3(2H)-one

Bioaccumulative potential No data available on bioaccumulation.

2-Methyl-2H-isothiazol-3-one

Bioaccumulative potential No data available on bioaccumulation.

12.4. Mobility in soil

**Mobility** No data available.

Ecological information on ingredients.

Polydimethylsiloxane

Mobility No data available.

1,2-Benzisothiazol-3(2H)-one

Mobility No data available.

2-Methyl-2H-isothiazol-3-one

Mobility Not known.

12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB**This product does not contain any substances classified as PBT or vPvB.

assessment

Ecological information on ingredients.

Polydimethylsiloxane

Results of PBT and vPvB No data available.

assessment

1,2-Benzisothiazol-3(2H)-one

Results of PBT and vPvB No data available.

assessment

2-Methyl-2H-isothiazol-3-one

# C4 Heating System Leak Sealer 500ml

**Results of PBT and vPvB** This substance is not classified as PBT or vPvB according to current EU criteria. **assessment** 

## 12.6. Other adverse effects

Other adverse effects None known.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**General information** Reuse or recycle products wherever possible. Disposal of this product, process solutions,

residues and by-products should at all times comply with the requirements of environmental

protection and waste disposal legislation and any local authority requirements.

**Disposal methods**Dispose of surplus products and those that cannot be recycled via a licensed waste disposal

contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water

authority.

### **SECTION 14: Transport information**

General The product is not covered by international regulations on the transport of dangerous goods

(IMDG, IATA, ADR/RID).

#### 14.1. UN number

Not applicable.

## 14.2. UN proper shipping name

Not applicable.

### 14.3. Transport hazard class(es)

No transport warning sign required.

## 14.4. Packing group

Not applicable.

#### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

## 14.6. Special precautions for user

Not applicable.

# 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78

and the IBC Code

## SECTION 15: Regulatory information

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

National regulations Health and Safety at Work etc. Act 1974 (as amended).

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment

Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].

EH40/2005 Workplace exposure limits.

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**EU legislation** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18

December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of

Chemicals (REACH) (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as

amended).

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by

Road.

ADN: European Agreement concerning the International Carriage of Dangerous Goods by

Inland Waterways.

RID: European Agreement concerning the International Carriage of Dangerous Goods by

Rail.

IATA: International Air Transport Association.

ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Dangerous Goods.

CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate.

LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.

LD₅o: Lethal Dose to 50% of a test population (Median Lethal Dose).

EC₅₀: 50% of maximal Effective Concentration.

PBT: Persistent, Bioaccumulative and Toxic substance.

vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms

Skin Sens. = Skin sensitisation

Key literature references and sources for data

Source: European Chemicals Agency, http://echa.europa.eu/

Classification procedures according to Regulation (EC) 1272/2008

Skin Sens. 1 - H317: : Calculation method.

Training advice

Read and follow manufacturer's recommendations. Only trained personnel should use this

material.

**Revision comments** Revised formulation.

Revision date 05/10/2018

Revision 3

Supersedes date 30/08/2018

SDS number 8092

# C4 Heating System Leak Sealer 500ml

Hazard statements in full H301 Toxic if swallowed.

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.