

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 Version 2 Revision Date 10.12.2018

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

1.1 Product identifiers

Product name : Caffeine

Product Number : 5479

Brand : Better Equipped

Index-No. : 613-086-00-5

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

CAS-No. : 58-08-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : Not for sale to the general public

1.3 Details of the supplier of the safety data sheet

Company : Better Equipped,
Wrenbury Business Park,
Wrenbury Road,
Wrenbury,
Nantwich, Cheshire,
CW5 8EB, UK

Telephone +44 (0) 800 9707142

Fax +44 (0) 800 066 4443

E-mail address sales@betterequipped.co.uk

1.4 Emergency telephone number

Emergency Phone # : +44 (0)1270 781238

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

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

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn Harmful R22

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word Warning

Hazard statement(s)
H302 Harmful if swallowed.

Precautionary statement(s) none

Supplemental Hazard Statements none

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : 1,3,7-Trimethylxanthine

Formula : C₈H₁₀N₄O₂

Molecular Weight : 194.19 g/mol

CAS-No. : 58-08-2

EC-No. : 200-362-1

Index-No. : 613-086-00-5

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Caffeine		
CAS-No. 58-08-2 EC-No. 200-362-1 Index-No. 613-086-00-5	Acute Tox. 4; H302	<= 100 %

Hazardous ingredients according to Directive 1999/45/EC

Component	Classification	Concentration
Caffeine		
CAS-No. 58-08-2 EC-No. 200-362-1 Index-No. 613-086-00-5	Xn, R22	<= 100 %

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 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

Take off contaminated clothing and shoes immediately. 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

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 treatment needed

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

None stated

5.2 Special hazards arising from the substance or mixture

no data available

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

- 6.1.1 For non-emergency personnel

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

- 6.1.2 For emergency responders

Wear respiratory protection. 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

Do not let product enter drains.

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.

SECTION 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.

7.1.2 Advice on general occupational hygiene:

- No smoking.
- Do not eat or drink.
- Wash hands after use.
- Remove contaminated clothing.

For precautions see section 2.2.

- 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 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

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.1.2 Information on currently recommended monitoring procedures

For currently recommended monitoring procedures, see HSE series 'Methods for the Determination of Hazardous Substances' (MDHS).

8.1.3 The relevant DNELs and PNECs for the substance/s for the exposure scenarios:

DNEL's. The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole.

Data for Workers

INHALATION Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 44.37 mg/m ³	repeated dose toxicity
Acute /short term:	-	-
Local Effects		
Long-term:	-	-
Acute /short term:	-	-
DERMAL Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 25.17 mg/kg bw/day	repeated dose toxicity
Acute /short term:	-	-
Local Effects		
Long-term:	-	-
Acute /short term:	-	-
EYE Exposure		

PNEC's. The Predicted No-Effect Concentration (PNEC) value is the concentration of a substance below which adverse effects in the environment are not expected to occur. Please note that when more than one summary is provided, PNEC values may refer to constituents of the substance and not to the substance as a whole.

Hazard for Aquatic Organisms	
Freshwater	87 µg/L (1)
Intermittent releases (freshwater)	870 µg/L (1)
Marine water	8.7 µg/L (1)
Intermittent releases (marine water)	-
Sewage treatment plant (STP)	10 mg/L (1)
Sediment (freshwater)	400 µg/kg sediment dw (1)
Sediment (marine water)	-
Hazard for Air	
Air	-
Hazard for Terrestrial Organism	
Soil	28.9 µg/kg soil dw (1)
Hazard for Predators	
Secondary poisoning	-

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. Use Local exhaust ventilation (LEV).

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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Breakthrough time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, 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 and safety officer 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

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: white
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	5.5 - 6.5 at 10 g/l at 20 °C
e)	Melting point/freezing point	Melting point/range: 234 - 236.5 °C - lit.
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
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	20 hPa at 89 °C
l)	Vapour density	No data available
m)	Relative density	1.230 g/cm ³ at 18 °C
n)	Water solubility	18.7 g/l at 16 °C
o)	Partition coefficient: n- octanol/water	log Pow: -0.091 at 23 °C
p)	Auto-ignition 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

Bulk density	220 kg/m ³
Dissociation constant	10.4 at 40 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

None based on the data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

None under normal processing

10.4 Conditions to avoid

Contact with incompatible material

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - male and female - 367.7 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - rat - male and female - 4.94 mg/l
(Calculation method)

LD50 Dermal - rat - male and female - > 2,000 mg/kg

Skin corrosion/irritation

Skin - rabbit

Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - rabbit

Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation

- mouse

Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

rat

Kidney

Micronucleus test

mouse

Micronucleus test

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Caffeine)

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

Additional Information

RTECS: EV6475000

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

Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish LC50 - *Leuciscus idus* (Golden orfe) - 87 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates static test EC50 - *Daphnia magna* (Water flea) - 182 mg/l - 48 h (DIN 38412)

Toxicity to algae static test - *Desmodesmus subspicatus* (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Unused product may be returned and reused, in addition to disposal.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information**14.1 UN number**

ADR/RID: - 2811

IMDG: - 2811

IATA: - 2811

14.2 UN proper shipping name

ADR/RID: Toxic solid, organic, n.o.s.

IMDG: Toxic solid, organic, n.o.s

IATA: Toxic solid, organic, n.o.s

14.3 Transport hazard class(es)			
ADR/RID: -6.1	IMDG: -6.1		IATA: -6.1
14.4 Packaging group			
ADR/RID: -III	IMDG: -III		IATA: -III
14.5 Environmental hazards			
ADR/RID: no	IMDG Marine pollutant: no		IATA: no
14.6 Special precautions for user			
no data available			
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			
N/A			

SECTION 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

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
H302	Harmful if swallowed.

Full text of R-phrases referred to under sections 2 and 3

Xn	Harmful
R22	Harmful if swallowed.

Revisions made since previous version of data sheet:

The following sections of this data sheet have been updated:

1.1, 1.2, 4.1, 5.1, 6.1, 7.1, 8.1, 8.2, 11, 12, 13, 14.7, 16

We strongly recommend reading the entire data sheet for this chemical in preparation ahead of use.

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. Better Equipped and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.
