

CAFFEINE

Safety Data Sheet (Conforms to Regulation (EU) No 2015/830)

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

Product Identifier

Product name	CAFFEINE
Chemical Name	caffeine
Synonyms	C8-H10-N4-O2, 3,7-dihydro-1,3,7-trimethyl-1H-purine-2,6-dione, 1H-purine, 2,6-dione, 3,7-dihydro-1,3,7-trimethyl-, methyltheobromine, theobromine, 1-methyl-, theophylline, 7-methyl-, 1,3,7-trimethylxanthine, caffein, coffein, coffeine, coffeinum, Eldiatric C, Guaranine, Kofein, Koffein, No-Doz, Organex, Thein, Theine, 102584 caffeine pure BP
Proper shipping name	ALKALOIDS, SOLID, N.O.S. or ALKALOID SALTS, SOLID, N.O.S. (contains caffeine)
Chemical formula	C8H10N4O2.H2O C8H10N4O2
Other means of identification	Not Available
CAS number	58-08-2
EC number	200-362-1
Index number	613-086-00-5
REACH registration number	01-2119433305-48-XXXX

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


Relevant identified uses	Central nervous system stimulant used in beverages and medicine (cardio-vascular and psychostimulant analeptic). Administered in powder or tablets in doses of 100 to 300 mg. Frequently included in analgesic preparations with aspirin or codeine. Use in soft drinks not to exceed 0.02%.
Uses advised against	Not Applicable

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] ^[3]	H302 - Acute Toxicity (Oral) Category 4
Legend:	1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	
SIGNAL WORD	WARNING

Hazard statement(s)

H302	Harmful if swallowed. H 402 I Harmful to aquatic life.
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Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.

Precautionary statement(s) Response

P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P330	Rinse mouth.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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Other hazards

Inhalation may produce health damage*.

Cumulative effects may result following exposure*.

Limited evidence of a carcinogenic effect*.

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP]
1.58-08-2 2.200-362-1 3.613-086-00-5 4.01-2119433305-48-XXXX	>99	<u>caffeine</u>	Acute Toxicity (Oral) Category 4; H302 ^[3]

Legend: 1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L

Mixtures

See 'Information on ingredients' in section 3.1

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</p>
Skin Contact	<p>If skin or hair contact occurs: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.</p>
Inhalation	<p>If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.</p>
Ingestion	<p>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed. In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</p> <p>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</p> <p>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise: ▶ INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. NOTE: Wear a protective glove when inducing vomiting by mechanical means.</p>

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

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

Treat symptomatically.

for caffeine intoxication:

If caffeine has been ingested within 4 hours in amounts over 15 mg/kg, removal from the stomach by Ipecac syrup or gastric lavage is recommended. Activated charcoal is probably useful within the first 4 hours. Magnesium sulfate cathartic may be useful.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. Combustion products include: , carbon monoxide (CO) , carbon dioxide (CO ₂) , nitrogen oxides (NO _x) , other pyrolysis products typical of burning organic material. May emit poisonous fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<p>Clean up waste regularly and abnormal spills immediately. Avoid breathing dust and contact with skin and eyes. Wear protective clothing, gloves, safety glasses and dust respirator. Use dry clean up procedures and avoid generating dust.</p>
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course.

Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<p>Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</p>
Fire and explosion protection	See section 5
Other information	<p>Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers.</p>

Conditions for safe storage, including any incompatibilities

Suitable container	<p>Glass container is suitable for laboratory quantities Lined metal can, lined metal pail/ can. Plastic pail. Polyliner drum. Packing as recommended by manufacturer. For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.): Removable head packaging; Cans with friction closures and low pressure tubes and cartridges may be used.</p>
Storage incompatibility	<p>Avoid strong acids, bases. Avoid reaction with oxidising agents</p>

Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

EXPOSURE PATTERN	WORKERS	GENERAL POPULATION
Long term - dermal, systemic effects	25.17 mg/kg bw/day	Not Available
Long term - inhalation, systemic effects	44.37 mg/m ³	Not Available
Long term - oral, systemic effects	Not Available	Not Available
Long term - dermal, local effects	Not Available	Not Available
Long term - inhalation, local effects	Not Available	Not Available
Short term - dermal, systemic effects	Not Available	Not Available
Short term - inhalation, systemic effects	Not Available	Not Available
Short term - oral, systemic effects	Not Available	Not Available
Short term - dermal, local effects	Not Available	Not Available
Short term - inhalation, local effects	Not Available	Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

COMPARTMENT	VALUE
Fresh Water	0.087 mg/L
Marine Water	0.0087 mg/L
Aqua	0.87 mg/L
Fresh water sediment	0.4 mg/kg sediment dw
Marine water sediment	Not Available
Soil	0.0289 mg/kg soil dw
STP	10 mg/L
ORAL	Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
CAFFEINE	Not Available	Not Available	Not Available	Not Available


Ingredient	Original IDLH	Revised IDLH
caffeine	Not Available	Not Available

MATERIAL DATA

Airborne particulate or vapour must be kept to levels as low as is practicably achievable given access to modern engineering controls and monitoring hardware. Biologically active compounds may produce idiosyncratic effects which are entirely unpredictable on the basis of literature searches and prior clinical experience (both recent and past).
 OEL STEL (Russia): 0.5 mg/m³

Exposure controls

8.2.1. Appropriate engineering controls	<p>Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation.</p> <p>HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours.</p> <p>Barrier protection or laminar flow cabinets should be considered for laboratory scale handling. A fume hood or vented balance enclosure is recommended for weighing/ transferring quantities exceeding 500 mg</p>
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8.2.2. Personal protection	
Eye and face protection	For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs: Chemical goggles Face shield. Full face shield may be required for supplementary but never for primary protection of eyes Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference. Double gloving should be considered. PVC gloves.
Body protection	See Other protection below
Other protection	For quantities up to 500 grams a laboratory coat may be suitable. For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs. For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
Thermal hazards	Not Available

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3 Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gases, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust condition

8.2.3. Environmental exposure controls

See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White fleecy masses or long, flexible, silky crystals or powder. Odourless with a bitter taste. Slightly soluble in water and alcohol. Soluble in chloroform; very slightly soluble in ether.		
Physical state	Divided Solid	Relative density (Water = 1)	1.23
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	925
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	178	Molecular weight (g/mol)	194.22
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not available.	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not available.	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water (g/L)	Partly miscible	pH as a solution (1%)	7
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity	See section 7.2
10.2. Chemical stability	<p>Unstable in the presence of incompatible materials.</p> <ul style="list-style-type: none"> Product is considered stable. Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhaled	<p>The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.</p> <p>Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures. Inhalation of caffeine dusts or aerosols may produce nose and throat irritation, coughing and chest discomfort. The material may act as a stimulant following massive inhalations. Heavy exposure may produce palpitations, excitement, insomnia, dizziness, headache and vomiting.</p>
Ingestion	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Xanthine derivatives may produce nausea, vomiting, anorexia, gastric pain, haematemesis, diarrhoea, and increased levels of SGOT. Proteinuria, diuresis, and increased excretion of renal tubular cells and red blood cells may also occur. Respiratory effects may include tachypnoea and arrest. Central nervous system effects may include restlessness, dizziness, headache, insomnia, reflex hyperexcitability, stammering speech, muscle twitching and convulsions alternating with severe depression.</p> <p>Ingestion of small amounts of caffeine (100-300 mg is not harmful and helps relieve mental fatigue, drowsiness and general inertia. Acute poisoning is characterised by nausea, vomiting, headaches, vertigo, muscle tremor, manic excitement, insomnia and occasionally, even convulsive coma. Additional symptoms are tinnitus, scintillating scotoma, extrasystoles, tachycardia, polyuria, sometimes followed by oliguria. Caffeine increases gastric secretions and may cause gastric ulceration. The fatal dose is probably about 10 grams. Low concentrations may produce a slight decrease in heart rate. Large amounts may produce headache, lightheadedness, dizziness, chills, fever, excitement, restlessness, nervousness, insomnia, mild delirium, hallucinations, tinnitus, constricted pupils, decreased visual fields, amblyopia, diplopia, and photophobia. Neurological symptoms may last for several days. Other symptoms of intake of large quantities include gastrointestinal irritation, nausea, vomiting, stimulation of gastric secretions, anorexia, haematemesis, abdominal cramps, diarrhoea, and diuresis followed by dehydration.</p>
Skin Contact	<p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
Eye	<p>Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.</p>
Chronic	<p>On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray. Caffeine and coffee consumption are highly correlated in most populations studied; thus it is difficult to separate the two exposures in epidemiologic investigations. No association between moderate consumption of coffee/caffeine and cardiovascular diseases was demonstrated in more recent studies. In short-term clinical trials an increase in blood pressure was seen, whereas in other surveys no relationship between caffeine consumption and elevation of blood pressure was observed. Caffeine consumed in moderate amounts did not cause persistent increase in blood pressure in normotensive subjects.</p>

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	TOXICITY	IRRITATION
caffeine	Oral (rat) LD50: 192 mg/kg ^[2]	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

CAFFEINE	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. Oral (woman) TDL0: 96 mg/kg/1d-I Tumorigenic - Carcinogenic by RTECS criteria.
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Acute Toxicity	✓	Carcinogenicity	⊖
Skin Irritation/Corrosion	⊖	Reproductivity	⊖
Serious Eye Damage/Irritation	⊖	STOT - Single Exposure	⊖
Respiratory or Skin sensitisation	⊖	STOT - Repeated Exposure	⊖
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend: ✗ – Data available but does not fill the criteria for classification
 ✓ – Data available to make classification
 ⊖ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

caffeine	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	NOEC	504	Crustacea	91mg/L	5
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

For caffeine:

Caffeine has a water solubility of 20 g/l, a vapor pressure of 4.7 * e-6 Pa and a log Kow of – 0.091.

Environmental fate:

Distribution modelling using Mackay, Level I, indicates that the main target compartment will be water with 99.99%.

Concerning biodegradation there is only a "not valid" study available for caffeine. However, from the structurally analogous compound theophylline it can be concluded that caffeine is readily biodegradable.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
caffeine	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
caffeine	LOW (LogKOW = -0.07)

Mobility in soil

Ingredient	Mobility
caffeine	LOW (KOC = 10)

Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT Criteria fulfilled?	Not Available	Not Available	Not Available

Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product / Packaging disposal	<p>Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible.</p> <p>Otherwise: If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: Reduction Reuse Recycling Disposal (if all else fails)</p> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <p>DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</p>
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 TRANSPORT INFORMATION

Land transport USDOT –

Not classified as a dangerous good under transport regulations

Sea transport IMDG –

Not classified as a dangerous good under transport regulations

Air transport IATA/ICAO-

Not classified as a dangerous good under transport regulations

SECTION 15 REGULATORY INFORMATION

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

CAFFEINE(58-08-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments

Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
caffeine	58-08-2	613-086-00-5	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4	GHS07; Wng	H302
2	Acute Tox. 4; Acute Tox. 3; Not Classified	GHS06; Dgr	H332; H301
1	Acute Tox. 4	GHS07; Wng	H302
2	Acute Tox. 4	GHS07; Wng	H302

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (caffeine)

Essentially Natural

Products with purpose.

The Essentially Natural Domain (Pty) Ltd | Reg. No. 2014/170069/07
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China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	<i>Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i>