

Section 1. Product and Company Information


GHS Product Name	: Caffeine
Product Code	: ALK-2-100
CAS	: [58-08-2]
Molecular Formula	: $C_8H_{10}N_4O_2$ 1,3,7-trimethylpurine-2,6-dione; 1,3,7-trimethylxanthine; Thein; Coffein, koffein; Phensal; Quick-Prep; Miudol; Dexitac; Caffeine; Kafein (INA)
Company	: MarkHerb
Address	: Gedung Riset dan Inovasi (ex. PAU Lt. 8), Institut Teknologi Bandung, Jl Ganesha 10, Bandung 40132
Tel.	: +62 877-4556-0063
Fax	: -
Website	: www.markherb.com
E-mail	: info@markherb.com

Section 2. Hazards Identification

2.1 GHS classification

PHYSICAL HAZARDS	: Not classified
HEALTH HAZARDS	: Acute Toxicity (Oral)- Category 3 Acute toxicity (Inhalation: Dusts and mists)- Category 4 Reproductive Toxicity- Category 1A
ENVIRONMENTAL HAZARDS	: Aquatic toxicity- Acute 3 Aquatic toxicity- Long term 3

2.2 GHS label elements, including precautionary statements

Pictograms or hazard symbols	: 
Signal word	: Warning
Hazard statements	: H302: Harmful if swallowed [Warning Acute Toxicity, oral] H332: Harmful if inhaled H360: May damage fertility or the unborn child H402: Harmful to aquatic life

Precautionary statements

: P201 : Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment
P281 Use personal protective equipment as required
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P308+P313: If exposed or concerned: Get Medical advice/attention
P405: Store locked up
P501 Dispose of contents/ container to an approved waste disposal plant

Section 3. Information on Basic Physical and Chemical Properties

Physical States : [] Gas [] Liquid [X] Solid
Melting Point : 238°C
Boiling Point : No data
Flash Point : No data
Evaporation Rate : No data
Flammability (solid, gas) : No data
Explosive Limits : No data
Vapor Pressure (vs. Air or mmHg) : 20 hPa (15 mmHg) at 89 °C
Vapor Density (vs. Air = 1) : No data
Specific Gravity (Water = 1) : No data
Solubility in Water : 21.6 g/L at 25°C
Solubility Notes : 1 gm dissolves in 46 mL water, 5.5 mL water at 80°C, 1.5 mL boiling water, 66 mL alcohol, 22 mL alcohol at 60°C, 50 mL acetone, 5.5 mL Chloroform, 530 mL ether, 100 mL benzene, 22 mL boiling benzene.
Freely soluble in pyridine, slightly soluble in petroleum ether, freely soluble in tetrahydrofuran containing about 4% water.
Autoignition Pt : No data
Percent Volatile : No data
Partition coefficient : log Pow: -0.091 at 23 °C (n-octanol/water)
pH : 5.5 - 6.5 at 10 g/l at 20 °C

Section 4. First aid measures

Description of first aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

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.

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**).

Indication of any immediate medical attention and special treatment needed

No data available

Section 5. Fire Fighting Measures

Suitable extinguishing

Media: Dry chemical, foam, water spray, carbon dioxide.

Precautions for firefighters: Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so.

Special protective equipment for firefighters: When extinguishing fire, be sure to wear personal protective equipment.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapors, mist or gas.

Environmental precautions

Do not let product enter drains.

General Information:

Use proper personal protective equipment as indicated in **Section 8**.

Spills/Leaks:

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete.

Section 7. Handling and Storage

Precautions for safe handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

Storage:

Store in a well closed container. Protected from air and light, keep in a dry place.

Specific end uses

Use in a laboratory fume hood where possible. Refer to employer is COSHH risk assessment.

Section 8. Exposure Controls / Personal Protection

Engineering controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Control parameters: Not set up

Personal protective equipment:

Respiratory protection: Dust respirator. Follow local and national regulations.

Hand protection: Protective gloves.

Eye protection: Wear safety glasses and chemical goggles if splashing is possible.

Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Section 9. Stability and Reactivity

Reactivity

Stable under recommended transport or storage conditions.

Chemical Stability

Stable under normal temperatures and pressures.

Conditions to Avoid

Incompatible materials, strong oxidants, heat.

Incompatibilities with Other Materials

Strong oxidising agents.

Hazardous Decomposition Products

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

Hazardous Polymerization

Has not been reported.

Section 10. Toxicological Information

Acute Toxicity	: LD ₅₀ Oral - Rat - male and female - 367.7 mg/kg (OECD Test Guideline 401) LC ₅₀ Inhalation - Rat - male and female - 4.94 mg/l (Calculation method) LD ₅₀ 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/irritation	: Eyes - Rabbit Result: No eye irritation(OECD Test Guideline 405)
Germ cell mutagenicity	: Rat Kidney Micronucleus test Mouse
Carcinogenicity	: IARC = No data; NTP = No data; OSHA = No data
Reproductive toxicity	: No data

Section 11. Ecological Information

Toxicity	:	Toxicity to fish LC50 - <i>Leuciscus idus</i> (Golden orfe) - 87 mg/l- 96 l Toxicity to daphnia and other aquatic : static test EC50 - <i>Daphnia magna</i> (Water flea) - 182 mg/l - 48 h (DIN 38412) Toxicity to algae : static test - <i>Desmodesmus subspicatus</i> (green) - > 100 mg/l - 72 h (OECD Test Guideline 201)
Persistence and degradability	:	No data
Bioaccumulative potential	:	No data
Mobility in soil	:	No data
Results of PBT & vPvB assessment	:	No data
Other adverse effects:	:	No data

Section 12. Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 13. Transport Information

Hazards Class

Does not meet the criteria for classification as hazardous for transport.

UN proper shipping name ADR/RID

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

Transport hazard class(es)

Does not meet the criteria for classification as hazardous for transport.

Section 14. Regulatory Information

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

no data

Chemical Safety Assessment

no data

Section 15. Additional Information

This MSDS above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

----End of safety data sheet----