

MARGO	Margo Biocontrols Pvt. Ltd., Tumkur, Karnataka	
	Document: Material Safety Data Sheets	Document No: QF/MBC/PROD/MSDS/001
	Title : MSDS of BASAMID®	Rev. : 00 Rev. Date: 02.05.2018 Page 1 of 10

MATERIAL SAFETY DATA SHEET
BASAMID® GRANULAR
(Soil Sterilant)

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

1.1 Product identifier

Product name: BASAMID®
Synonyms: BASAMID® GRANULAR, BASAMID® GRANULAT

1.2 Relevant identified uses of the substance or mixture and uses advised against
Nematicide, fungicide, herbicide, insecticide for agricultural use

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Regulation (EC) No 1272/2008 [CLP]	
Hazard classes/Hazard categories	Hazard statements
Acute Tox. 4	H302
Eye Irrit. 2	H319
STOT SE 3	H335
Skin Irrit. 2	H315
Skin Sens. 1	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

For complete wording of R-phrases, Hazard statements and Precautionary statements, see section 16.

Adverse physicochemical effects:	None.
Adverse human health effects:	Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
Adverse environmental effects:	Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Hazard pictograms:



Signal word:

Warning.

Hazard statements:

H302, H319, H335, H315, H317, H410

Precautionary statements:

P261, P262, P280, P284, P312, P501

Supplemental information:

EUH401

2.3 Other hazards

The mixture does not meet the criteria for PBT or vPvB in accordance with Annex XIII of REACH.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

For complete wording of R-phrases and Hazard statements see section 16.

Chemical name	Common name	EC No	CAS-No	Amount (%)	Classification according to Regulation (EC) No 1272/2008 [CLP]	
					Hazard and codes	Hazard classes category
tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione (IUPAC)	dazomet (ISO)	208-576-7	533-74-4	> 95 %	Acute Tox. 4, Eye Irrit. 2, STOT SE 3, Skin Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1	H302, H319, H335, H315, H317, H400, H410

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	Avoid contact with the skin, eyes and clothing. Remove contaminated clothing. If difficulties occur: obtain medical attention. Show container, label and/or safety data sheet to Doctor
Inhalation	Keep patient calm, remove to fresh air, seek medical attention
Skin contact	Wash thoroughly with soap and water. If irritation develops, seek medical attention.
Eye contact	Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.
Ingestion	Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control centre or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

4.2 Most important symptoms and effects, both acute and delayed

Epidemiological evidence after accidents: rapid (< 24h) onset of chiefly upper- but also lower airway irritation consistent with RADS (Reactive Airway Dysfunction Syndrome), and potential to aggravate pre-existing asthma. Symptoms include nose and throat irritation, shortness of breath, chest tightness, cough, wheezing. Early symptoms also include eye irritation, or skin rash and itching. Clinical data indicate skin sensitizing potential (human patch test). Dazomet may cause bullous eruption, sore itching, erythema, oedema and scaling after skin contact, most probably caused by MITC. Systemic effects like hepatotoxicity (increase of transaminases) are possible, as well as gastro-intestinal dysfunction (nausea, irritation, vomiting), and more general symptoms (headache, dizziness).

4.3 Indication of any immediate medical attention and special treatment needed

Information for doctors: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Water fog, foam, dry extinguishing media.

Collect contaminated extinguishing water separately; do not allow reaching sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

5.2 Special hazards arising from the substance or mixture

In the case of combustion CO₂/CO, H₂O, N₂/NO_x and SO₂ will be generated.

5.3 Advice for fire fighters

Wear self-contained breathing apparatus and chemical-protective clothing. In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Use personal protective clothing (see Section 8). Bystanders are requested to leave the emergency site.

6.2 Environmental precautions

Do not discharge into drains/surface water/groundwater. Do not discharge into subsoil/soil.

6.3 Methods and material for containment and cleaning up

Collect with broom and shovel or preferably vacuum cleaner.

Use damp cloth to clean floors and other objects after removal of the product and/or contaminated adsorbent. Adding a detergent will enhance the cleaning process.

Avoid raising dust. Cleaning operations should be carried out while wearing breathing apparatus. Place recovered material, contaminated adsorbent and used cleaning materials into suitable containers, which can be labeled and sealed. Dispose of material in accordance with regulations.

6.4 Reference to other sections

See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

GENERAL: READ LABEL BEFORE USE

- P102: KEEP OUT OF REACH OF CHILDREN
- Ensure thorough ventilation of stores and work areas
- Protect against moisture
- Avoid dust formation
- Avoid deposition of dust. Dust can form an explosive mixture with air.
- Prevent electrostatic charge. Sources of ignition should be kept clear.

General safety and hygiene measures:

- Wear protective clothing as in Section 8. Wearing of closed work clothing is recommended.
- Avoid contact with eyes, skin and clothing.
- P270: Do not eat, drink or smoke when using the product.
- P264: Wash hands thoroughly after handling.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- Keep away from foodstuffs, beverages and feed
- Wash face and hands before eating, drinking or smoking.

7.2 Conditions for safe storage, including any incompatibilities

- P402+P404: Store in a dry place. Store in a close container.
- Segregate in original container under usual warehouse conditions, i.e. dry and frost-free avoiding temperatures above 40°C and below -10°C. Good ventilation is required.
- Store out of reach of unauthorized persons.
- Keep away from food, drink and animal feeding stuffs.
- Protect against moisture
- Keep away from heat and direct sunlight
- Keep away from sources of ignition
- Storage stability: 24 months. Change in the properties of the product may occur if substance/product is stored above or below above indicated temperatures for extended periods of time.

7.3 Specific end use(s)

Refer to the label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Not established for the product. Use adequate exhaust ventilation to keep airborne concentration to a minimum

8.2 Exposure controls

8.2.1 Appropriate engineering controls

- Make available local exhaust ventilation.
- Make available washing face/hands equipments.
- General hygienic measures : see Section 7
- Remove contaminated clothing. Store work clothing separately.

8.2.2 Individual protection measures, such as personal protective equipment

(a) Eye protection

Tightly fitting safety goggles (splash goggles) (EN 166).

(b) Skin protection

(i) Hand protection

Suitable chemical resistant safety gloves (EN374; Recommended: Protective index 6, corresponding > 480 minutes of permeation time); e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other.

(ii) Others

Wear standard impervious protective garment (coverall) and boots as appropriate.

(c) Respiratory protection

Wear suitable respiratory protection (A1P2 combi-filter)

Personal protective equipment (PPE) should be to European (EN) standards.

8.2.3 Environmental exposure controls

P273: Avoid release in the environment.

Do not discharge the product into the environment without control.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<i>Appearance:</i>	White, fine granular solid (MG)
<i>Odour:</i>	Characteristic moderate fishy odour
<i>Odour threshold:</i>	Not available
<i>pH:</i>	7.2 (as a 1% watery dispersion)
<i>Melting point/freezing point:</i>	105°C (dazomet active ingredient)
<i>Initial boiling point:</i>	Decomposition before boiling (dazomet active ingredient)
<i>Flash point:</i>	Not applicable
<i>Evaporation rate:</i>	Not applicable
<i>Flammability (solid, gas):</i>	Not highly flammable

Upper/lower flammability or explosive limits:	Not relevant
Vapour pressure:	2.1×10^{-3} Pa (25°C) (dazomet active ingredient)
Vapour density:	Not applicable
Relative density:	1.34 g cm^{-3} (20°C)
Solubility(ies):	3.5 g L^{-1} in distilled water at 20°C (dazomet active ingredient)
Partition coefficient n-octanol/water:	$\log P_{ow} = 0.63$ at 20°C (dazomet active ingredient)
Auto-ignition temperature:	Not auto-flammable
Decomposition temperature:	150°C (dazomet active ingredient)
Viscosity:	Not applicable (solid)
Explosive properties:	Not explosive (theoretical consideration)
Oxidising properties:	Not oxidising (theoretical consideration)

9.2 Other information

Bulk density:	0.678 kg L^{-1}
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10. STABILITY AND REACTIVITY

10.1 Reactivity

No reactivity with packaging material after two-year storage at ambient temperature.

10.2 Chemical stability

No thermal decomposition if stored and handled as prescribed/indicated (see Section 7).

10.3 Possibility of hazardous reactions

Contact with water or moisture liberates toxic gases.

Dust explosion hazard: The substance itself is not considered to be an explosive due to its chemical composition. The potential for dust explosion hazard was not evaluated but it is mentioned as a precautionary measure.

10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

Water

10.6 Hazardous decomposition products

Methyl isothiocyanate (MITC). Exposition to moisture induces the decomposition of dazomet into methyl isothiocyanate. Methyl isothiocyanate is toxic by inhalation and if swallowed, irritant to eyes and respiratory system, corrosive and sensitizing by skin contact.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

(a) Acute toxicity (dazomet active ingredient):

	Effect dose	Species	Remark
Acute oral toxicity	LD ₅₀ = 596 mg/kg (males) and 415 mg/kg (females)	Rat	Acute Tox. 4; H302
Acute dermal toxicity	LD ₅₀ > 2000 mg/kg	Rat	Based on available data, the classification criteria are not met.

Acute dermal toxicity	LD ₅₀ > 8.4 mg/L (males) and 7.3 mg/kg (females) LD ₅₀	Rat	Based on available data, the classification criteria are not met.
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(b) *Skin corrosion/Irritation:*

	Exposure time	Species	Evaluation	Remark
Skin irritation	4h	Rabbit	Non skin-irritant, non skin-corrosive	Based on human-case studies, Skin Irrit. 2; H315

(c) *Serious eye damage/irritation:*

Species	Evaluation	Remark
Rabbit	Not irritant	Based on human-case studies, Eye irrit. 2; H319

(d) *Respiratory or skin sensitisation:*

Species	Evaluation	Method	Remark
Guinea-pig	Not skin-sensitising	Magnusson and Kligman method	Based on human-case studies, Skin Sens. 1; H317

(e) *Germ cell mutagenicity:* No mutagenic potential (dazomet active ingredient)

(f) *Carcinogenicity:*

Exposure time	Species	Specific effects	Remark
2 years	Rat	Not carcinogenic	Based on available data, the classification criteria are not met.
2 years	Mouse	Not carcinogenic	

(g) *Reproductive toxicity*

Study	Species	Specific effects	Remark
Two-generation	Rat	No effects on reproduction function or on offsprings	Based on available data, the classification criteria are not met.
Teratogenicity	Rat	No developmental toxicity	
Teratogenicity	Rabbit	No developmental toxicity	

(h) *STOT-single exposure:*Based on human-case studies (upper airway irritant), Basamid® should be classified as STOT SE 3; H335

(i) *STOT-repeated exposure:*The classification is not possible because the data are inconclusive.

(j) *Aspiration hazard:*The classification is not possible because the data are lacking.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

<i>Acute fish toxicity (dazomet active ingredient) :</i>	LC ₅₀ = 0.3 mg/L (96h; bluegill)
<i>Acute daphnia toxicity :</i>	EC ₅₀ =0.427 mg/L (48h; Daphnia magna)
<i>Acute algae toxicity (dazomet active ingredient) :</i>	E _b C ₅₀ =0.16 mg/L; E _r C ₅₀ =0.59 mg/L (72h; Pseudokirchneriella subcapitata)
<i>Acute bird oral toxicity :</i>	LD ₅₀ =498 mg/kg (Colinus virginianus)
<i>Acute honey bee toxicity :</i>	Not relevant. No exposure expected due to the specific application of the product according to the label.
<i>Acute earthworm toxicity :</i>	LC ₅₀ = 6.7 mg /kg (14d; Eisenia foetida)

Activated sludge respiration inhibition: EC₅₀(30 min) = ca. 160 mg/L

12.2 Persistence and degradability

dazomet active substance :

Half-life	Method	Evaluation
Soil	Field and lab studies	DT ₅₀ = < 2 days
Air	Atkinson method of calculation	DT ₅₀ = 0.85 hours
Water/sediment	Laboratory study	DT ₅₀ (whole system) = 0.4-0.63 days

Biodegradability: dazomet active substance : not readily biodegradable

12.3 Bioaccumulative potential

Dazomet active substance: Low, log Pow = 0.63.

12.4 Mobility in soil

Known or predicted distribution to environmental compartments:

Potential risk for contamination of groundwater by MITC. To protect groundwater, do not apply the product more than once every 3 years (EU Directive 2011/53/EU)

dazomet active ingredient :
Surface tension (20°C, 1.0% w/w):
Adsorption value:

69.9 mN/m
K_{oc} = 260 mL/g

12.5 Results of PBT and vPvB assessment

Not relevant.

12.6 Other adverse effects

No specific adverse effects known.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

The recommended method of waste treatment is controlled incineration in a licensed incinerator. Dispose of product containers and waste containers and residues according to the local health and environmental regulations. Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. TRANSPORT INFORMATION

14.1 UN number (ADR/RID, ADN, IMDG, ICAO/IATA)

UN No. 3077

14.2 UN proper shipping name (ADR/RID, ADN, IMDG, ICAO/IATA)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains DAZOMET)

14.3 Transport hazard class(es) (ADR/RID, ADN, IMDG, ICAO/IATA)

Class 9



ADR: Tunnel Restriction code (E)

14.4 Packing group (ADR/RID, ADN, IMDG, ICAO/IATA)

Packaging group III

14.5 Environmental hazards (ADR/RID, ADN, IMDG, ICAO/IATA)

Environmentally hazardous mixture

IMDG: Marine pollutant (P)

14.6 Special precautions for user

No information.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant.

15. REGULATORY INFORMATION

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

Dazomet is listed in Annex I of the Council directive 91/414/EEC.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier. Dazomet as active substance in plant protection products is exempted from REACH registration.

16. OTHER INFORMATION

SDS Version 5.0 (November 2016).

This version replaces the version 4.0 of January 18th 2013. The main reason for updating is the following:

- Removal of Old directive (1999/45) information.

Abbreviations explanations :

MG : micro granule;

PBT, persistent, bioaccumulative and toxic; vPvB, very persistent and very bioaccumulative;

BCF : bioconcentration factor.

ADR : Accord européen relatif au transport international des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID : Règlement International concernant le transport des marchandises Dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG : International Maritime Dangerous Goods Code

ICAO : International Civil Aviation Organization

IATA : International Air Transport Association

Main Source for data: Conclusion on the peer review of the pesticide risk assessment of the active substance dazomet, EFSA Journal (2010); 8(10):1833.

Risk phrases explanations: R22, Harmful if swallowed; R36/37/38, Irritating to eyes, respiratory system and skin; R43, May cause sensitization by skin contact; R50/53, Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard statements explanations: H302, Harmful if swallowed; H315, Causes skin irritation; H317, May cause an allergic skin reaction; H319, Causes serious eye irritation; H335, May cause respiratory irritation; H400, Very toxic to aquatic life; H410, Very toxic to aquatic life with long lasting effects.

Precautionary statements explanations: P261, avoid breathing dust; P262, do not get in eye, on skin, or on clothing; P280, wear protective gloves/protective clothing/eye protection/face protection; P284, wear respiratory system; P312, Call a POISON CENTER or doctor/physician if you fell unwell; P501, dispose of contents/container in accordance with local regulation.

Supplemental information explanations: EUH401, to avoid risks to human health and the environment, comply with the instructions for use.

This SDS is prepared by Japan Agro Services S.A., Boulevard de la Woluwe 60, 1200 Brussels (Tel : +32 (0)2 776 83 90)

N/A – Not applicable

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This product is for agricultural use only