



MATERIAL SAFETY DATA SHEET

Material name : BactiBlock[®] 101 R4.47

Revision Date : 8 October 2012

Print date : 8 October 2012

1.- IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY /UNDERTAKING

Material name: BactiBlock[®] 101 R4.47

Chemical name: Silver organomodified Bentonite

Application: Additive for polymers
A preservative and bacteriostatic agent for use in the manufacture of polymer, paint, plastic and latex products.

Supplier: NanoBioMatters BactiBlock, S.L.
C/ Louis Pasteur, 11; Nave 5
Parque Tecnológico
46980 Paterna
VALENCIA-SPAIN
contact@nanobiomatters.com

Emergency Telephone number: + 34 96 131 86 28 (office time)

Container size: 5 / 10 /12,5/ 15/ 25 /50 Kg plastic bags/drums
Plastic bottles for quantities < 5 Kg

2. HAZARDS IDENTIFICATION

The product is classified: Xn;R22 Xi;R38-R41 N;R50.
Human health: Harmful if swallowed. Risk of serious damage to eyes. Irritating to skin.
Environment: Very toxic to aquatic organisms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS RN	(%)
Bentonite	1302-78-9	68.1-78.1
Cetrimonium bromide	57-09-0	20-30
Silver (active i.)	7440-22-4	1.9

BactiBlock[®] 101 R4.47 is manufactured using a patented and proprietary technology developed by Nanobiomatters.

4. FIRST-AID MEASURES

Inhalation: Dust inhalation: In case of problems: Move injured person into fresh air and keep person calm under observation. Get medical attention, if needed and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if irritation persists and bring these instructions.

Eye contact: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

See section 11 for more detailed information on health effects and symptoms.



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5. FIRE-FIGHTING MEASURES

Fire fighting equipment/instructions	Use fire-extinguishing media appropriate for surrounding materials.
Extinguishing media which must not be used for safety reasons	Do not use water jet.
Unusual fire & explosion	Dusts may form an explosive mixture with air. Take precautionary measures against static discharge.
Specific hazards	Not a fire hazard. The product itself does not burn. Material can be slippery when wet
Protective equipment for	Selection of respiratory protection for fire fighting: follow the general fire-fighters: fire precautions indicated in the workplace

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Avoid inhalation of dust and contact with skin and eyes. Use work methods which minimize dust production. Keep unnecessary personnel away. Wear a dust mask if dust is generated above exposure limits.
Environmental precautions:	Do not discharge into drains, water courses or onto the ground. Do not flush into surface water.
Containment procedures	Avoid allowing water runoff to contact spilled material. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Contaminated surfaces will be slippery.
Methods for cleaning up	Sweep up or gather material and place in appropriate container for disposal. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Avoid dust formation.

7. HANDLING AND STORAGE

Safe handling advice:	Avoid inhalation of dust and contact with skin and eyes. Change contaminated clothing. Observe good chemical hygiene practices. Keep formation of airborne dusts to a minimum. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid prolonged exposure. Wash thoroughly after handling.
Technical measures:	Use work methods which minimise dust production. Avoid spreading dust.
Technical precautions:	Provide easy access to water supply and eye wash facilities.
Technical measures for safe storage:	No special precautions
Storage conditions:	Store in closed original bags/ container. Do not store near heat sources or expose to excessive temperatures. Avoid direct sunlight.



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8.- EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of dust. An eye wash bottle must be available at the work site.

Chemical name:	Exposure limits:	Type:	Notes:
Dusts non-specific-respirable	4 mg/m ³	TWA	-
Dusts non-specific-total inhalable	10 mg/m ³	TWA	-

Personal protection: Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment

Respiratory equipment: Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Hand protection: Wear protective gloves. Nitrile gloves are recommended.

Eye protection: Wear safety glasses with side shields.

Skin protection: Wear suitable protective clothing.

Hygiene measures: Wash hands after contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid.
Form	Powder.
Colour	Off-white.
Odour	Odourless.
pH	8 (100 g/l)
Melting point	> 250°C
Freezing point	Not applicable
Boiling point	Not applicable
Flash point	Not applicable
Flammability limits in air, upper, % by volume	Not available
Flammability limits in air, lower, % by volume	Not available
Vapour pressure	Not applicable
Vapour density	Not applicable
Specific gravity	1.4 - 1.8
Relative density	Not available.
Solubility (water)	low partial solubility
Auto-ignition temperature	Not applicable
Decomposition temperature:	>200°C
Percent volatile	0 % estimated
Viscosity	Not applicable
Particle size (PSD)	d(0.90) = 16 microns
Risk of dust explosion:	None under normal conditions.



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10.- STABILITY AND REACTIVITY

Stability: Stable under normal temperature conditions.

Conditions to avoid: None known

Hazardous decomposition: If heated to more than 200°C, the following substance(s) will be released: alkyl products decomposition product, amines

11. TOXICOLOGICAL INFORMATION

Inhalation: Dust may irritate the respiratory system.

Skin contact: Irritating to skin.

Eye contact: Risk damage to eyes. Immediate first aid is necessary.

Ingestion: Harmful if swallowed. Causes stomach pain, vomiting, diarrhoea and convulsions.

Specific effects: None known.

12. ECOLOGICAL INFORMATION

Mobility: The product has a very low solubility in water

Degradability: Methods for determining the biological degradability are not applicable to inorganic substances. The available organic part is expected to be biodegradable. Degradability: min. 70%

Ecotoxicity: Very toxic to aquatic organisms
LC50 (Brachydanio rerio, 96 hours): 1 < LC50 < 10 mg/l
EC50 (Daphnia magna, 48 hours): 0,12 mg/l (OECD Test Guideline 202)
EC50 (P *Scenedesmus subspicatus* , 72 hours): 0,43 mg/l (OECD Test Guideline 201)

Bioaccumulative potential: It is not expected to be bioaccumulable.

Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

Disposal instructions: Dispose in accordance with local regulations.

Waste from residues / unused products: Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

UN-number: 3077

Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Other information:
The product is classified: Environmentally Hazardous substance



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Sea (IMDG):

Class: 9
PG: III
MP: Yes
EmS: F-A, S-F
MFAG: 1

Inland waterways: To be handed locally

Air (ICAO/IATA):

Class: 9
Packing group: III

Land (RID/ADR):

Class: 9
Packing group: III
Primary risk label: 9
Subsidiary risk label: -

15. REGULATORY INFORMATION



Labelling: Silver organomodified bentonite

R22 Harmful if swallowed.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.

S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre
S39 Wear eye/face protection.
S60 This material and its container must be disposed of as hazardous waste.
S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

16. OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

This MSDS has been prepared according to [Directive 1999/45/EC \(preparations\)](#) and [Directive 98/8](#) (biocides)

➔ **Revision/Changes Control :**

0.- Initial version : 09 July 2010
1.- Revision 1 : 31 July 2012 (expanded applications and uses- inclusion email- inclusion active substance and concentration)
2.- Revision 2 : 08 October 2012 (update)