

1. IDENTIFICATION

Product name: The Oppenheimer Formula®

Other means of identification: None

Recommended use: Bioremediation of hydrocarbons

Recommended restrictions: None known

Manufacturer

Company name: Oppenheimer Biotechnology Inc.

Address: PO Box 1490
Pflugerville, TX 78660

Telephone: 512-474-1016

Website: obio.com

Email: obiotech@obio.com

Emergency phone: 512-751-2121

2. HAZARDS IDENTIFICATION

This product contains less than 0.25% respirable crystalline silica according to a modified version of the NIOSH 7500 method. It does not meet the criteria for classification as hazardous according to criteria set forth by OSHA Hazard Communication Standard (29 CFR 1910.1200) or EC Regulation 1272/2008.

The microbes are considered Class 1 and have not been connected to any safety issues.

Physical hazards: Can be slippery when wet.

Health hazards: Not classified

Environmental hazards: Not classified

OSHA defined hazards: Not classified

Label elements

Hazard symbol: None

Signal word: N/A

Hazard Statement: N/A

Prevention: N/A

Response: N/A

Storage: Keep dry

Disposal: In accordance with local regulations (if any)

Hazard(s) not otherwise classified: None known

Supplemental information: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical Name	CAS number	%
Bentonite	1302-78-9	≥95
Quartz	14808-60-7	<5

Mixed microbe population N/A

Bentonite is a UVCB substance sub-type 4. The purity of the product is 100 % w/w. Bentonite is composed mainly of smectite group minerals but the composition is varied, as expected for a UVCB substance, and other mineral constituents will be present in small and varying amounts. These minor constituents are not relevant for classification and labelling.

4. FIRST-AID MEASURES

Inhalation: No specific first aid measures. Move to fresh air.

Skin contact: No specific first aid measures. Can be drying. Wash with soap and water.

Eye contact: No specific first aid measures. Can be irritating. Flush thoroughly with water.

Ingestion: No specific first aid measures. Rinse mouth thoroughly.

Most important symptoms/effects, acute and delayed

Dust in the eyes can cause irritation

4. FIRST-AID MEASURES (con't)

Indication of immediate medical attention and special treatment needed

None needed.

General information

Just provide generally supportive measures and treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use any media suitable for the surrounding fires.

Unsuitable extinguishing media: Not applicable, non-combustible

Specific hazards arising from the chemical: None known. The product itself does not burn

Special protective equipment and precautions for firefighters: None known

Fire-fighting equipment/instructions Can be slippery when wet.

General fire hazards: This material will not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product

Methods and materials for containment and cleaning up:

Avoid the generation of dusts during clean-up. Collect powder using vacuum cleaner with particle filter or carefully sweep into closed container. If required, the microbes can be destroyed with the use of household bleach.

Environmental precautions: No special environmental precautions required.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities: Store in a dry area. Keep the container dry. No special restrictions on storage with other products

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Constituents	Type	Value	Form
INERT/NUISANCE DUST (CAS SEQ250)	PEL	5mg/m ³	Respirable
		15mg/m ³	Total dust

US. OSHA Table Z-3 Limits for Air Contaminants (29 CFR 1910.1000)

Constituents	Type	Value	Form
INERT/NUISANCE DUST (CAS SEQ250)	TWA	5mg/m ³	Respirable
		15mg/m ³	Total dust

Occupational exposure limits

US. OSHA Table Z-3 Limits for Air Contaminants (29 CFR 1910.1000)

Constituents	Type	Value	Form
		50 millions	Total dust of particle
		15 millions	Respirable of particle

US. ACGIH Threshold Limit Values

Constituents	Type	Value	Form
INERT/NUISANCE DUST (CAS SEQ250)	TWA	3mg/m ³	Respirable particles
		15mg/m ³	Inhalable particles

Biological limit values: No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CON'T)

Individual protection measures, such as personal protective equipment

Eye/face protection: Wear dust-resistant safety goggles where there is danger of eye contact.

Hand protection: No protection is ordinarily required under normal conditions of use. Gloves can be worn.

Other: No special protective equipment required. Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection: Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

Thermal hazards: Not applicable.

General hygiene considerations: Use good industrial/biological hygiene practices in handling this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Fine powder.

Physical state: Solid.

Color: Light grey

Odor: Slight oil smell Odor threshold: Not applicable.

pH: 8.5

Melting point: > 842 °F (> 450 °C)

Freezing point: Not applicable.

Initial boiling point/range: Not applicable.

Flash point: Not applicable.

Evaporation rate: Not available.

Flammability (solid, gas) This product is not flammable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%): Not applicable

Flammability limit - upper (%): Not applicable

Explosive limit - lower (%): Not available.

Explosive limit - upper (%): Not available.

Vapor pressure: Not applicable.

Vapor density: Not applicable.

Relative density: 2.6 g/cm³

Solubility(ies)

Solubility (water): < 0.9 mg/l

Partition coefficient: Not applicable

(n-octanol/water): Not applicable.

Auto-ignition temperature: Not applicable.

Decomposition temperature: > 932 °F (> 500 °C)

Viscosity: Not applicable.

Viscosity temperature Not applicable.

Other information

Bulk density: 0.9 - 1.4 g/cm³

Explosive limit: Not applicable.

Explosive properties: Not explosive

Explosivity: Not applicable.

Flame extension: Not applicable.

Flammability: Not applicable.

Flammability(flashback): Not applicable.

Flammability (Heat of combustion): Not applicable.

Flammability (Train fire): Not applicable.

Flammability class: Not applicable.

Flash point class: Not flammable

Molecular formula: UVCB Substance

Molecular weight: Not applicable.

Oxidizing properties: None.

Percent volatile: 0 %

pH in aqueous solution: 8.5

Specific gravity: Not applicable.

VOC (Weight %): 0 %

10. STABILITY AND REACTIVITY

Reactivity: Not available.

Chemical stability: Stable at normal conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to avoid: Moisture.

Incompatible materials: None known.

Hazardous decomposition products: None.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Ingestion:

Not classified.

Inhalation: Not classified. Inhalation of dusts may cause respiratory irritation.

Skin contact: Not classified. Could be drying.

Eye contact: Not classified. Dust in the eyes will cause irritation.

Symptoms related to the physical, chemical and toxicological characteristics: None known.

Information on toxicological effects

Acute toxicity: Not classified

Species Test Results

Acute

Inhalation

LC50 Rat > 5.27 mg/l, 4 hr OECD 436

Oral

LD50 Rat > 2000 mg/kg OECD 425

Skin corrosion/irritation: Not classified.

Serious eye damage/eye irritation: Mild irritant to eyes (according to the modified Kay & Calandra criteria)

Respiratory sensitization: Not classified.

Skin sensitization: Not classified.

Germ cell mutagenicity: Not classified.

Carcinogenicity: No carcinogenicity data available for this product. Sepiolite was evaluated by IARC as class 3 ("Cannot be classified as to carcinogenicity to humans"). Based on read-across with sepiolite, bentonite was assessed as non-carcinogenic. Therefore classification of bentonite for carcinogenicity is not warranted.

Reproductive toxicity: Not classified.

Specific target organ toxicity - single exposure:
Not classified

Specific target organ toxicity - repeated exposure:
Not classified.

Aspiration hazard: Not available.

12-15 NOT MANDATORY

16 OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date 16-March-2015 Version # 01

Further information

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

NFPA ratings

0

0 0

UVCB: A substance of Unknown or Variable composition, Complex reaction products or Biological materials

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.