1. Identification of the substance/preparation and company

Trade name
BENTONIL GTC4

Material number: 249483

Use of the substance/preparation.
Type of use : Bentonite has a variety of uses. It can be used as a rheology modifier, binding agent, adsorbent, filler and other i.e for applications like: foundry, iron ore agglomeration, drilling, construction – civil engineering, filtration (i.e oil, wine, beer), pharmaceutical & cosmetics, cat litter, food and feed additives in human and animal nutrition.

Identification of the company
Clariant South East Asia Pte. Ltd.

1 International Business Park #08-01-04 The Synergy
609917 Singapore
Telephone no. : +65 6563 0288

Information about the substance/preparation
Business Unit Functional Minerals
Product Stewardship

Emergency telephone number : 00800-5121 5121

2. Hazard identification

Classification of the substance or mixture

The product is not classified and labelled in accordance with GHS regulation and the relevant national laws.

GHS label elements, including precautionary statements
The product is not classified and labelled in accordance with GHS regulation and the relevant national laws.

Pictograms - Hazard symbols

Other hazards which do not result in classification
The product contains less than 1% w/w RCS (respirable crystalline silica) as determined by the SWERF method. The respirable crystalline silica content can be measured using the “Size-Weighted Respirable Fraction – SWERF” method. All details about the SWERF method is available at www.crystallinesilica.eu
Depending on the handling and use (grinding, drying, bagging), airborne respirable dust may be generated. Dust contains respirable crystalline silica. Prolonged and or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of silicosis are cough and breathlessness. Occupational exposure to respirable dust should be monitored and controlled. The product should be handled using methods and techniques that minimize or eliminate dust generation.
The substance does not meet the criteria for PBT or vPvB substance.

3. Composition/information on ingredients

Chemical characterization

Synonyms: Bentonite, sodian; Bentonite, calcian; Montmorillonite, Sodium-activated Bentonite
Bentonite is a UVCB substance, sub-type 4. The purity of the product is 100 % w/w.
Impurities are not applicable for a UVCB substance.

CAS number : 1302-78-9
EINECS number : 215-108-5

4. First aid measures

General information

No known delayed effects. Consult a physician for all exposures except for minor instances.

After inhalation

Remove to fresh air immediately. Get medical attention immediately.

After contact with skin

Wash off immediately with soap and plenty of water.

After contact with eyes

Rinse thoroughly with plenty of water, also under the eyelids.
If symptoms persist, call a physician.

After ingestion

Clean mouth with water and drink afterwards plenty of water.

Most important symptoms/effects, acute and delayed

Symptoms

There are no acute and delayed symptoms and effects observed.

Hazards

No information available.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media

The product itself does not burn.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray jet
Dry powder
Foam
Carbon dioxide (CO2)

Extinguishing media that must not be used for safety reasons

no restrictions

Specific hazards arising from the chemical

The material is not flammable and it does not support fire. No hazardous thermal decomposition products.

Special protective equipment and precautions for fire fighters

In the event of fire, wear self-contained breathing apparatus.
Special sliding risk through leaking of spilled product in connection with water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Avoid dust formation.
Evacuate personnel to safe areas.
Avoid contact with skin, eyes and clothing.
Wear personal protective equipment.
Avoid breathing dust.
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).
Special sliding risk through leaking of spilled product in connection with water.

Environmental precautions

No special environmental precautions required.

Methods and materials for containment and cleaning up

Pick up and transfer to properly labelled containers.
If product is released from trucks in roads, place signposts and remove the spill using vacuum cleaning systems.

Additional information

see point 8, 13
Avoid dust formation; avoid dry sweeping
Use vacuum suction unit, or shovel into bags.

7. Handling and storage

Precautions for safe handling

Avoid dust formation.
Provide sufficient air exchange and/or exhaust in work rooms.
In case of insufficient ventilation, wear suitable respiratory equipment.
For personal protection see section 8.
Handle and open container with care.
If you require advice on safe handling techniques or specific uses, please contact your supplier or check the further information referred to in section 16.

Conditions for safe storage, including any incompatibilites

Requirements for storage rooms and vessels

Minimize airborne dust generation and prevent wind dispersal during loading and unloading.
Keep containers closed and store packaged products so as to prevent accidental bursting.

Advice on storage compatibility

No conditions to be specially mentioned.

Storage stability

Stable under recommended storage conditions.

8. Exposure controls/personal protection

Control parameters

Bentonite (dust)
Nepsi (European Network on Silica)
Revision : 1/2006
Exposure limit(s)
Total dust
Values: 10 mg/m3

Bentonite (dust)
Nepsi (European Network on Silica)
Revision : 1/2006
Exposure limit(s)
Respirable fraction
Values: 3 mg/m3
http://www.nepsi.eu/agreement-good-practice-guide/occupational-exposure-limits.aspx

Appropriate engineering controls
Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet.

Hygiene measures
Wash hands before breaks and at the end of workday.

Eye/face protection :	Do not wear contact lenses. Safety glasses with side-shields Ensure that eyewash stations and safety showers are close to the workstation location.
Skin/Hand protection :	Use a high fat protective cream after cleaning skin. Wear suitable gloves.
Respiratory protection :	Local ventilation to keep levels below established threshold values is recommended. In case of prolonged exposure to airborne dust concentrations, a suitable particle filter mask that complies with the requirements of national legislation is recommended, depending on the expected exposure levels.
Thermal hazards / Body protection :	Long sleeved clothing

9. Physical and chemical properties

Form :	peacey, granular, powder
Colour :	bright to earthy
Odour :	none
pH value :	6 - 11 (20 °C) Method : Aqueous suspension For detail information please refer to our physical & chemical data sheet.
Melting point/range :	> 450 °C Method : EU A.1

Boiling point/boiling range :	not applicable (solid with a melting point > 450 °C)
Flash point :	not applicable (solid with a melting point > 450 °C)
Evaporation rate :	not applicable (solid with a melting point > 450 °C)
Oxidizing properties :	no oxidizing properties (Based on the chemical structure, the substance does not contain a surplus of oxygen or any structural groups known to be correlated with a tendency to react exothermally with combustible material)
Self-ignition temperature :	Method : Directive 92/69/EEC, A.6 no relative self-ignition temperature below 400 °C
Lower explosion limit :	non explosive (void of any chemical structures commonly associated with explosive properties)
Vapour pressure :	not applicable (solid with a melting point > 450 °C)
Density :	2.6 g/cm3
Bulk density :	500 - 1,100 kg/m3 For detail information please refer to our physical & chemical data sheet.
Vapour density in relation to air :	not applicable
Solubility in water :	< 0.9 g/l (20 °C) Method : Directive 84/449/EEC, A.6
Octanol/water partition coefficient (log Pow) :	not applicable, inorganic
Thermal decomposition :	No decomposition if used as directed.
Viscosity (dynamic) :	not applicable (solid with a melting point > 450 °C)

10. Stability and reactivity

Chemical stability:
The product is chemically stable.

Possibility of hazardous reactions
None known.

Conditions to avoid
Forms slippery/greasy layers with water.

Incompatible materials
inert, not reactive
Avoid storing together with materials that may be affected by dust.

Hazardous decomposition products
Not relevant

11. Toxicological information

Information related to the product itself:

Acute oral toxicity : LD50 > 2 g/kg (rat)
Method : OECD Test Guideline 420

Acute inhalation toxicity : no data available

Acute dermal toxicity : no data available, Bentonite is almost insoluble and has a low absorption through the skin.

Skin corrosion/irritation : non-irritant (rabbit)
Method : OECD Test Guideline 404

Serious eye damage/irritation: non-irritant (rabbit)
Method : OECD Test Guideline 405

Respiratory or skin sensitization : no data available, Bentonite is considered not to be a skin sensitizer based on experience in handling and low absorption through the skin.

STOT - Single Exposure: Remarks: No organ toxicity observed in acute tests., Based on available data, the classification criteria are not met.

Aspiration hazard :
No aspiration toxicity classification

Remarks

Specific symptoms in animal studies (likely route of exposure):

In case of ingestion:
No acute or long term effects were seen in animal studies following oral exposure.

In case of skin contact:
No acute effects were seen in an animal study following acute dermal exposure.
Bentonite is not a skin irritant

In case of inhalation:
No acute effects were seen in an animal study following acute inhalation exposure.

Bentonite contains crystalline silica, which is a known cause of silicosis, a progressive, sometimes fatal lung disease. In a 1997 monograph (Volume 68, “Silica, Some Silicates, Coal Dust and Para-aramid Fibrils”), the International Agency for Research on cancer (IARC) has classified “inhaled crystalline silica from occupational sources” in Group 1 as a substance “carcinogenic to humans”. In making the overall evaluation, the IARC Working Group noted that carcinogenicity in humans was not detected in all industrial circumstances studied. Crystalline silica has also been classified by the German MAK Commission as a human carcinogen (Category A1).

Although bentonite contains quartz, an intratracheal study (Creutzenberg 2008) on the read across substance bentonite demonstrated significant differences in toxicity following administration of equivalent doses of quartz as either bentonite (15.2 mg of bentonite with 60% quartz) or reference quartz (10.5 mg of 87% quartz). The reference-quartz caused significant, self-perpetuating lung toxicity while bentonite demonstrated significantly less toxicity and partial recovery during the study period. The main effect of bentonite was slight fibrosis and inflammation of the lung. The study demonstrated that a simple bridging of toxicity data from quartz to bentonite is not appropriate.

Occupational exposure to respirable dust should be monitored and controlled

12. Ecological information

Information related to the product itself:

Biodegradability :	The methods for determining biodegradability are not applicable to inorganic substances.
Bioaccumulation:	Not relevant for inorganic substances
Fish toxicity :	LC50 16 g/l (96 h, Oncorhynchus mykiss (rainbow trout))
	LC50 2.8 - 3.2 g/l (24 h, Marine water fish)
Daphnia toxicity :	EC50 > 100 mg/l (48 h, Daphnia magna (Water flea)) Method : OECD Test Guideline 202
	EC50 81.6 mg/l (96 h, Metacarcinus magister)
	EC50 24.8 mg/l (96 h, Pandalus danae)
Algae toxicity :	EC50 > 100 mg/l (72 h, Desmodesmus subspicatus (Scenedesmus subspicatus))

Toxicity to terrestrial plants: 84.4 mg/kg (Phaseolus vulgaris)
No effect on the growth was observed.

84.4 mg/kg (Zea mays)
No effect on the growth was observed.

Remarks
none

13. Disposal considerations

Product
Can be disposed of as solid waste in a suitable installation subject to the Environmental Protection (Duty of Care) Regulations.
Avoid dust formation.
Where possible recycling is preferred to disposal or incineration.

Uncleaned packaging
No specific requirements.

14. Transport information

IATA not restricted
IMDG not restricted

15. Regulatory information

Safety, health and environmental regulations specific for the product in question

Water Hazard Class (Ger.) : not water endangering

Other regulations
Bentonite is not a SEVESO substance, not an ozone depleting substance and not a persistent organic pollutant.
The product (bentonite) is not separately classified by the Occupational Health and Safety Administration (OSHA). The product has not been classified as a human carcinogen by OSHA , the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP).

16. Other information

Social Dialogue on Respirable Crystalline Silica:

A multi-sectoral social dialogue agreement on Workers Health Protection through the Good Handling and Use of Crystalline Silica and Products Containing it was signed on 25 April 2006. This autonomous agreement, which receives the European Commission’s financial support, is based on a Good Practices Guide. The requirements of the Agreement came into force on 25 October 2006. The Agreement was published in the Official Journal of the European Union (2006/C 279/02). The text of the Agreement and its annexes, including the Good Practices Guide, are available from http://www.nepsi.eu and provide useful information and guidance for the

handling of products containing respirable crystalline silica. Literature references are available on request from EUROSIL, the European Association of Industrial Silica Producers.
Prolonged and/or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystal
In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated. (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)
In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore preventing the onset of silicosis will also reduce the cancer risk…" (SCOEL SUM Doc 94-final, June 2003.
So there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis. Worker protection against silicosis should be assured by respecting the existing regulatory occupational exposure limits and implementing additional risk management measures where required (see section 16 below).
This safety data sheet (SDS) is based on the legal provisions of the REACH Regulation (EC 1907/2006; article 31 and Annex II), as amended. Its contents are intended as a guide to the appropriate precautionary handling of the material. It is the responsibility of recipients of this SDS to ensure that the information contained therein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. Information and instructions provided in this SDS are based on the current state of scientific and technical knowledge at the date of issue indicated. It should not be construed as any guarantee of technical performance, suitability for particular applications, and does not establish a legally valid contractual relationship. This version of the SDS supersedes all previous versions.
