



SAFETY DATA SHEET

1. Identification

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|---|---|
| Product identifier | BENTOLITE® L10 |
| Other means of identification | Not available. |
| Recommended 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. |
| Recommended restrictions | None known. |
| Manufacturer/Importer/Supplier/Distributor information | |
| Manufacturer | |
| Address | BYK Additives Inc. 1212 Church Street, Gonzales TX 78629 USA |
| Telephone number | +1 (830) 672 2891 |
| Website | www.byk.com |
| e-mail address | MSDSInfo.BYK.Additives@altana.com |
| Emergency number | CHEMTREC (International): +1 (703) 527 3887 CHEMTREC (US): (800) 424 - 9300 |

2. Hazard(s) identification

| | |
|------------------------------|--|
| Physical hazards | Not classified. |
| Health hazards | Carcinogenicity Category 1A |
| Environmental hazards | Not classified. |
| OSHA defined hazards | Not classified. |

Label elements



| | |
|-------------------------|-------------------|
| Signal word | Danger |
| Hazard statement | |
| H350 | May cause cancer. |

Precautionary statement

Prevention

| | |
|------|--|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P264 | Wash thoroughly after handling. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

Response

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|-------------|--|
| P308 + P313 | If exposed or concerned: Get medical advice/attention. |
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Storage

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|------|------------------|
| P405 | Store locked up. |
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Disposal

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|------|---|
| P501 | Dispose of contents/container (in accordance with related regulations). |
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|--|------------------------------------|
| Hazard(s) not otherwise classified (HNOC) | Material can be slippery when wet. |
|--|------------------------------------|

| | |
|---------------------------------|-------|
| Supplemental information | None. |
|---------------------------------|-------|

3. Composition/information on ingredients

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|---------------|--------------------------|------------|----------|
| Bentonite | | 1302-78-9 | 97 - 100 |

| Chemical name | Common name and synonyms | CAS number | % |
|---------------|--------------------------|------------|-------|
| Quartz | | 14808-60-7 | < 3.0 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments 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

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| Inhalation | If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse. |
| Eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth with water. Get medical attention if symptoms occur. If ingestion of a large amount does occur, seek medical attention. |
| Most important symptoms/effects, acute and delayed | None known. Direct contact with eyes may cause temporary irritation. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. No hazards which require special first aid measures. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Use fire-extinguishing media appropriate for surrounding materials. |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | The product itself does not burn. During fire, gases hazardous to health may be formed. Material can be slippery when wet. |
| Special protective equipment and precautions for firefighters | Wear self-contained breathing apparatus and protective clothing. Material can be slippery when wet. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. Non-combustible, substance itself does not burn. Material can be slippery when wet |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Material can be slippery when wet. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Stop the flow of material, if this is without risk. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Do not flush into surface water. Do not let product enter drains. |

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust from this material. Avoid contact with skin and eyes. Avoid prolonged exposure. Should be handled in closed systems, if possible. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Protect from moisture. Avoid dust formation. Store locked up. Keep container tightly closed. Store in a well-ventilated place. Guard against dust accumulation of this material. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components | Type | Value | Form |
|---------------------|------|-----------------------|-------------|
| Quartz (14808-60-7) | TWA | 0.1 mg/m ³ | Respirable. |
| | | 0.3 mg/m ³ | Total dust. |

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

| Additional components | Type | Value | Form |
|--------------------------|------|----------------------|----------------------|
| Nuisance dust. (CAS:N/A) | PEL | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| | TWA | 15 mppcf | Respirable fraction. |
| | | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| | | 50 mppcf | Total dust. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|---------------------|------|-------------------------|----------------------|
| Quartz (14808-60-7) | TWA | 0.025 mg/m ³ | Respirable fraction. |

US. ACGIH Threshold Limit Values

| Additional components | Type | Value | Form |
|--------------------------|------|----------------------|-----------------------|
| Nuisance dust. (CAS:N/A) | TWA | 10 mg/m ³ | Inhalable particles. |
| | | 3 mg/m ³ | Respirable particles. |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Form |
|---------------------|------|------------------------|------------------|
| Quartz (14808-60-7) | TWA | 0.05 mg/m ³ | Respirable dust. |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields.
Use tight fitting goggles if dust is generated.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Use protective skin cream before handling the product. Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.

Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards

Not available.

General hygiene considerations

Do not breathe dust. Avoid contact with eyes. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

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|---|------------------------------------|
| Appearance | Powder. |
| Physical state | Solid. |
| Form | Powder. |
| Color | Off-white. |
| Odor | Odorless. |
| Odor threshold | Not applicable |
| pH | 7.0 - 8.5 , 10% aqueous suspension |
| Melting point/freezing point | Not applicable |
| Initial boiling point and boiling range | Not applicable |
| Flash point | Not applicable |
| Evaporation rate | Not applicable |
| Flammability (solid, gas) | Not applicable |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not applicable |
| Flammability limit - upper (%) | Not applicable |
| Explosive limit - lower (%) | Not applicable |
| Explosive limit - upper (%) | Not applicable |
| Vapor pressure | Not applicable |
| Vapor density | Not applicable |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Insoluble |
| Auto-ignition temperature | Not applicable |
| Decomposition temperature | Not applicable |
| Viscosity | Not applicable |
| Other information | |
| Density | 2.60 g/cm3 |
| Percent volatile | 0 % estimated |
| Specific gravity | 2.60 |

10. Stability and reactivity

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|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur. |
| Conditions to avoid | Avoid spread of dust. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). |
| Incompatible materials | None known. |
| Hazardous decomposition products | No dangerous reaction known under conditions of normal use. No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

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|---------------------|--|
| Inhalation | Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Dust in the eyes will cause irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Material name: BENTOLITE® L10

187 Version #: 05 Revision date: Feb-16-2015 Issue date: Feb-16-2015

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| Product | Species | Test Results |
|-------------------|---------|---|
| BENTOLITE® L10 | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | 204.0816 mg/kg estimated 5.3776 mg/l estimated |
| <i>Oral</i> | | |
| LD50 | Rat | 2040.8163 mg/kg estimated |
| Components | Species | Test Results |

| | | |
|---------------------------|-----|------------------------------|
| Bentonite (CAS 1302-78-9) | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | >= 5.27 mg/l (OECD 436, rat) |
| <i>Oral</i> | | |
| LD50 | Rat | > 2000 mg/kg (OECD 420, rat) |

* Estimates for product may be based on additional component data not shown.

| | |
|--|--|
| Skin corrosion/irritation | Prolonged skin contact may cause temporary irritation. |
| Serious eye damage/eye irritation | Dust in the eyes will cause irritation. Mild irritant to eyes (according to the modified Kay & Calandra criteria) |
| Respiratory or skin sensitization | |
| Respiratory sensitization | Not available. |
| Skin sensitization | This product is not expected to cause skin sensitization. |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| Carcinogenicity | May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. |

IARC Monographs. Overall Evaluation of Carcinogenicity

Quartz (CAS 14808-60-7) 1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Quartz (CAS 14808-60-7) Known To Be Human Carcinogen.

| | |
|---|---|
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not available. |
| Chronic effects | Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Overexposure to dust may result in pneumoconiosis, a respiratory disease caused by inhalation of mineral dust, which can lead to fibrotic changes to the lung tissue, or silicosis, a respiratory disease caused by inhalation of silica dust, which can lead to inflammation and fibrosis of the lung tissue. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. |

12. Ecological information

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|--------------------|--|
| Ecotoxicity | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
|--------------------|--|

| Components | Species | Test Results |
|---------------------------|---------|---|
| Bentonite (CAS 1302-78-9) | | |
| Aquatic | | |
| Algae | EC50 | Freshwater algae >= 100 mg/l, 72 hours |
| Crustacea | EC50 | Daphnia >= 100 mg/l, 48 hours |
| | | Freshwater invertebrate 81.6 mg/l, 96 hours Dungeness crab 24.8 mg/l, 96 hours dock shrimp |
| Fish | LC50 | Freshwater fish 16000 mg/l, 96 hours rainbow trout |

| Components | Species | Test Results |
|------------|-------------------|--|
| | Marine water fish | 2800 - 3200 mg/l, 24 hours bass, blue gill and sunfish |
| | Rainbow Trout | 19000 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

| | |
|--------------------------------------|---|
| Persistence and degradability | The methods for determining the biological degradability are not applicable to inorganic substances. Not inherently biodegradable. The product solely consists of inorganic compounds which are not biodegradable. The product contains inorganic compounds which are not biodegradable. The other components of the product are slowly biodegradable. |
| Bioaccumulative potential | No data available. Not applicable. |
| Mobility in soil | No data available. Bentonite is almost insoluble and thus presents a low mobility in most soils |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. Not expected to be harmful to aquatic organisms. |

13. Disposal considerations

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|--|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Material should be recycled if possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Dispose of in accordance with local regulations. Can be landfilled, when in compliance with local regulations. |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

14. Transport information

| | |
|---|-----------------------------------|
| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |
| IMDG | Not regulated as dangerous goods. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |

15. Regulatory information

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|---|---|
| US federal regulations | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. |
| CERCLA Hazardous Substance List (40 CFR 302.4) | Not listed. |
| SARA 304 Emergency release notification | Not regulated. |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | Not listed. |
| Superfund Amendments and Reauthorization Act of 1986 (SARA) | |
| Hazard categories | Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No |
| SARA 302 Extremely hazardous substance | Not listed. |
| SARA 311/312 Hazardous chemical | Yes |

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations****US - Massachusetts RTK - Substance List: Extraordinarily hazardous**

Quartz (CAS 14808-60-7)

US - Massachusetts RTK - Substance: Listed substance

Quartz (CAS 14808-60-7)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Quartz (CAS 14808-60-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Quartz (CAS 14808-60-7)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Quartz (CAS 14808-60-7)

Listed: October 1, 1988

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of New and Existing Chemicals (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

| | |
|----------------------|-------------|
| Issue date | Feb-16-2015 |
| Revision date | Feb-16-2015 |
| Version # | 05 |

Further information

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 in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (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)

According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

MANUFACTURER DISCLAIMER: The information given within this SDS is correct to the best of our knowledge, information and belief at the date of its revision and publication. However, the manufacturer makes no representation, warranty or guarantee as to its accuracy, reliability or completeness, nor assumes any liability for its use. It is the user's responsibility to confirm in advance that the information is current, applicable and suitable to their circumstances for each particular use. No representative of ours has authority to waive this provision. Please call for document accuracy if the revision date has exceeded 3 years.

Revision Information

Product and Company Identification: Product Uses
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Regulatory Information: United States
Material Attributes & Uses; Experimental Data: Experimental Data
REACH: Registration Substance