

1. Identification

Product identifier	OPTIGEL® LX
Other means of identification	Not available.
Recommended use	Optigel® products are rheological additives used for gelling efficiency in aqueous systems, and can be used as binders or plasticizers in refractory formulations.
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.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	
P308 + P313	If exposed or concerned: Get medical advice/attention.
Storage	
P405	Store locked up.
Disposal	
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Material can be slippery when wet.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Bentonite		1302-78-9	65 - 75
Quartz		14808-60-7	< 1
Tetrasodium Pyrophosphate		7722-88-5	0.5

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

4. First-aid measures

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

Suitable extinguishing media	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. No unusual fire or explosion hazards noted. 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	Non-combustible, substance itself does not burn. Material can be slippery when wet No unusual fire or explosion hazards noted.

6. Accidental release measures

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 0.3 mg/m ³	Respirable. 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 50 mppcf	Total dust. 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.
Tetrasodium	TWA	5 mg/m ³	
Pyrophosphate (7722-88-5)			

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

Appearance

Powder.

Physical state

Solid.

Form

Powder.

Color

Off-white.

Odor

Odorless.

Odor threshold

Not applicable

pH	Not applicable
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)	Partly soluble
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable
Other information	
Percent volatile	0 % estimated
Specific gravity	1.83 estimated

10. Stability and reactivity

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

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

Product	Species	Test Results
OPTIGEL® LX (CAS Mixture)		
Acute		
<i>Inhalation</i>		
LC50	Rat	7.1031 mg/l estimated
<i>Oral</i>		
LD50	Rat	2740.3516 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)
Tetrasodium Pyrophosphate (CAS 7722-88-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
PII	Rabbit	0.01 Score = 0
<i>Inhalation</i>		
LC50	Rat	> 0.58 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	300 - 2000 mg/kg

* 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

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.
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Product	Species	Test Results	
OPTIGEL® LX (CAS Mixture)			
Aquatic			
Crustacea	EC50	Daphnia	20000 mg/l, 48 hours estimated
Fish	LC50	Fish	20000 mg/l, 96 hours estimated

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
		Marine water fish	2800 - 3200 mg/l, 24 hours bass, blue gill and sunfish
		Rainbow Trout	19000 mg/l, 96 hours
Tetrasodium Pyrophosphate (CAS 7722-88-5)			
	EC50	Aquatic plants	> 100 mg/l, 72 hours Fresh water
Aquatic			
Crustacea	EC50	Daphnia	> 100 mg/l, 48 hours Fresh water
	LC50	Daphnia	< 15 mg/l, 72 hours Marine water
Fish	LC50	Fish	> 100 mg/l, 96 hours Fresh water - Oncorhynchus mykiss

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

Persistence and degradability	Not inherently biodegradable. The methods for determining the biological degradability are not applicable to inorganic substances. No data is available on the degradability of this product.
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

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

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: Listed substance**

Quartz (CAS 14808-60-7)
 Tetrasodium Pyrophosphate (CAS 7722-88-5)

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)
 Tetrasodium Pyrophosphate (CAS 7722-88-5)

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

Quartz (CAS 14808-60-7)
 Tetrasodium Pyrophosphate (CAS 7722-88-5)

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 Jan-14-2015
Revision date Jan-14-2015
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
Toxicological Information: Toxicological Data
GHS: Classification