

# MATERIAL SAFETY DATA SHEET



## 1. Product and Company Identification

**Material name** Laponite® XL21  
**Version #** 05  
**Revision date** Oct-02-2013  
**Synonym(s)** INCI name: Sodium Magnesium Fluorosilicate  
**Manufacturer information** BYK Additives Inc.  
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**Manufacturer** BYK Additives Ltd, Widnes, UK

**Product use** Laponite® products are used to control viscosity and flow properties in water based formulations such as toothpaste, paint, personal care and household cleaning products. Laponite® can impart shear sensitive viscosity and improve syneresis control. Laponite® products are also used to produce antistatic coatings.

## 2. Hazards Identification

**Emergency overview** Material can be slippery when wet. Exposure to powder or dusts may be irritating to eyes, nose and throat.  
Health injuries are not known or expected under normal use.

**OSHA regulatory status** This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).

**Potential health effects**

- Routes of exposure** Inhalation. Not applicable.
- Eyes** Dust in the eyes will cause irritation.
- Skin** Dust or powder may irritate the skin.
- Inhalation** Dust may irritate respiratory system.
- Ingestion** May cause irritation.

**Signs and symptoms** Not applicable.

**Potential environmental effects** Ecological injuries are not known or expected under normal use.

## 3. Composition / Information on Ingredients

Non-hazardous components	CAS #	Percent
Lithium magnesium sodium fluoride silicate	64060-48-6	100

## 4. First Aid Measures

**First aid procedures**

- Eye contact** Flush eyes with water as a precaution.
- Skin contact** Wash off with soap and water.
- Inhalation** If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
- Ingestion** If ingestion of a large amount does occur, seek medical attention.

**General advice** If you feel unwell, seek medical advice (show the label where possible). No hazards which require special first aid measures.

## 5. Fire Fighting Measures

**Flammable properties** Not a fire hazard. The product is not flammable. No unusual fire or explosion hazards noted. None known.

**Extinguishing media**

- Suitable extinguishing media** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media** None known.

**Protection of firefighters**

**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.

**Protective equipment and precautions for firefighters** Wear self-contained breathing apparatus and protective clothing.

**Fire fighting equipment/instructions** No unusual fire or explosion hazards noted.

**Specific methods** Cool containers exposed to flames with water until well after the fire is out.

**6. Accidental Release Measures**

**Personal precautions** Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Avoid inhalation of dust from the spilled material.

**Environmental precautions** Do not flush into surface water. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods for containment** 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 extremely slippery.

**Methods for cleaning up** Dike far ahead of spill for later disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid dust formation. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

**7. Handling and Storage**

**Handling** Provide appropriate exhaust ventilation at places where dust is formed. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe dust from this material. Avoid contact with skin and eyes. Practice good housekeeping. Keep formation of airborne dusts to a minimum. Handle and open container with care.

**Storage** Store in a well-ventilated place. Keep container tightly closed. Avoid dust formation. Guard against dust accumulation of this material.

**8. Exposure Controls / Personal Protection**

**Occupational exposure limits**

**US. ACGIH Threshold Limit Values**

<b>Additional components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Nuisance dust. (CAS:N/A)	TWA	10 mg/m3	Inhalable particles.
		3 mg/m3	Respirable particles.

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

<b>Additional components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Nuisance dust. (CAS:N/A)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		5 mg/m3	Respirable fraction.
		15 millions of particle	Respirable fraction.
		50 millions of particle	Total dust.
		15 mg/m3	Total dust.

**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. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

**Personal protective equipment**

**Eye / face protection** Use tight fitting goggles if dust is generated.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment. Wear a dust mask if dust is generated above exposure limits.

**General hygiene considerations**

Do not breathe dust. Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical & Chemical Properties**

<b>Appearance</b>	White, crystalline, powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder
<b>Color</b>	White.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	9.7 , 2% aqueous dispersion
<b>Vapor pressure</b>	Not applicable
<b>Vapor density</b>	Not applicable
<b>Boiling point</b>	Not applicable
<b>Melting point/Freezing point</b>	1652 °F (900 °C) , fuses / Not applicable
<b>Solubility (water)</b>	Insoluble, forms a colloid gel
<b>Specific gravity</b>	Not available.
<b>Relative density</b>	2.40
<b>Flash point</b>	Not applicable
<b>Flammability limits in air, upper, % by volume</b>	Not applicable
<b>Flammability limits in air, lower, % by volume</b>	Not applicable
<b>Auto-ignition temperature</b>	Not available.
<b>Evaporation rate</b>	Not applicable
<b>Percent volatile</b>	0 % estimated
<b>Bulk density</b>	700.00 - 1300.00 kg/m <sup>3</sup>
<b>Other data</b>	
<b>Relative density temperature</b>	68 - 69.8 °F (20 - 21 °C) OECD method 109
<b>Surface tension</b>	72.4 mN/m @ 21.5 ± 0.5°C

**10. Chemical Stability & Reactivity Information**

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Avoid spread of dust. Exposure to air or moisture over prolonged periods.
<b>Incompatible materials</b>	Incompatible with strong acids and oxidizing agents.
<b>Hazardous decomposition products</b>	No dangerous reaction known under conditions of normal use.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

**11. Toxicological Information****Toxicological data**

<b>Product</b>	<b>Test Results</b>
Laponite® XL21	Acute Dermal LD50 Rabbit: 2000 mg/kg bw estimated Acute Inhalation LC50 Rat: 1660 mg/m <sup>3</sup> estimated Acute Oral LD50 Rat: 2000 mg/kg bw estimated
<b>Components</b>	<b>Test Results</b>
Lithium magnesium sodium fluoride silicate (64060-48-6)	Acute Dermal LD50 Rabbit: > 2000 mg/kg bw Similar substance Acute Dermal PII Rabbit: 0.5 Acute Inhalation LC50 Rat: > 1.7 mg/l 4.00 hours 'Discriminating dose' - maximum achievable dosing level

Components	Test Results
Lithium magnesium sodium fluoride silicate (64060-48-6)	Acute Oral LD50 Rat: > 2000 mg/kg bw
* Estimates for product may be based on additional component data not shown.	
<b>Local effects</b>	Inhalation of dusts may cause respiratory irritation.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Further information</b>	This product has no known adverse effect on human health.

## 12. Ecological Information

### Ecotoxicological data

Product	Test Results
Laponite® XL21	EC50 Algae: 100 mg/l 72.00 hours estimated LC50 Daphnia: 100 mg/l 24.00 hours estimated LC50 Daphnia: 100 mg/l 48.00 hours estimated LC50 Fish: 100 mg/l 96.00 hours estimated

Components	Test Results
Lithium magnesium sodium fluoride silicate (64060-48-6)	EC50 Algae: > 100 mg/l 72.00 hours LC50 Daphnia: > 100 mg/l 24.00 hours mortality LC50 Daphnia: > 100 mg/l 48.00 hours mobility LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): > 100 mg/l 96.00 hours

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

<b>Ecotoxicity</b>	This product has no known eco-toxicological effects.
<b>Persistence and degradability</b>	Not inherently biodegradable. The methods for determining the biological degradability are not applicable to inorganic substances.
<b>Bioaccumulation / Accumulation</b>	Not applicable.

## 13. Disposal Considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
<b>Waste from residues / unused products</b>	Material should be recycled if possible. Can be landfilled, when in compliance with local regulations. Not applicable.
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport Information

### DOT

Not regulated as dangerous goods.

## 15. Regulatory Information

<b>US federal regulations</b>	This product is not known to be 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.
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CERCLA/SARA Hazardous Substances - Not applicable.

### Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2))

Not regulated

### DEA Essential Chemical Code Number

Not regulated

### Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated

**DEA Exempt Chemical Mixtures Code Number**

Not regulated

**CERCLA (Superfund) reportable quantity**

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - No  
 Delayed Hazard - No  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** No

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
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)	No
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)

**REACH - EU** Laponite Type 1 (Silicate(2-), Hexafluoro-, Disodium, Reaction Products With Lithium Magnesium Sodium Silicate) has been registered. The REACH registration number is 01-2119900458-39-0000.

**16. Other Information**

**Recommended restrictions** None known

**Further information** HMIS® is a registered trade and service mark of the NPCA.

**HMIS® ratings** Health: 1  
 Flammability: 0  
 Physical hazard: 0

**NFPA ratings** Health: 1  
 Flammability: 0  
 Instability: 0

**Disclaimer** 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.

**Issue date** Oct-02-2013

**This data sheet contains changes from the previous version in section(s):** Product and Company Identification: Synonyms  
 Product and Company Identification: Manufacturer  
 Composition / Information on Ingredients: Disclosure Overrides