MATERIAL SAFETY DATA SHEET

BYK Additives & Instruments

1. Product and Company Identification

Material name **Laponite® RD**

Version # 05

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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.

Eyes Dust in the eyes will cause irritation.

Skin Dust or powder may irritate the skin. Health injuries are not known or expected under normal use.

Inhalation Dust may irritate respiratory system.

Ingestion May cause irritation. Health injuries are not known or expected under normal use.

Signs and symptoms Not applicable.

3. Composition / Information on Ingredients

Non-hazardous components	CAS #	Percent
Silicic Acid, Lithium Magnesium Sodium Salt	53320-86-8	100

4. First Aid Measures

First aid procedures

Eye contact Get medical attention if irritation develops or persists. Flush eyes with water as a precaution.

Skin contact Wash off with soap and water. Get medical attention if irritation develops or persists.

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 Rinse mouth. If ingestion of a large amount does occur, seek medical attention.

Notes to physician None known.

General advice 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 suitable protective equipment. Wear self-contained breathing apparatus and protective clothing.
Fire fighting equipment/instructions	No unusual fire or explosion hazards noted.
Specific methods	Standard procedure for chemical fires.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits.
Environmental precautions	Do not flush into surface water. Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not contaminate water.
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	Should not be released into the environment. 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. Avoid release to the environment.
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

Additional components	Type	Value	Form
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)

Additional components	Type	Value	Form
Nuisance dust. (CAS:N/A)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
	TWA	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	Wear safety glasses with side shields. Use tight fitting goggles if dust is generated.
Skin protection	PVC or other plastic material gloves.
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

Appearance	white crystalline powder
Physical state	Solid.
Form	Powder
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	9.8 2% dispersion in water
Vapor pressure	Not available.
Vapor density	Not available.
Boiling point	Not applicable
Melting point/Freezing point	>= 900 Fuses
Solubility (water)	Not available.
Specific gravity	Not available.
Relative density	2.40
Flash point	Not available.
Flammability limits in air, upper, % by volume	Not applicable
Flammability limits in air, lower, % by volume	Not applicable
Auto-ignition temperature	Not available.
Viscosity	Not applicable
Percent volatile	0 % estimated
Bulk density	0.70 - 1.30 kg/m3
Other data	
Flammability	Not applicable
Flammability class	Not applicable
Relative density temperature	71.6 °F (22 °C)
Surface tension	71.9 mN/m @ 20C and 1000mg/l

10. Chemical Stability & Reactivity Information

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

11. Toxicological Information

Toxicological data

Product	Test Results
Laponite® RD	Acute Dermal LD50 Rabbit: > 2000 mg/kg
	Acute Inhalation LC50 Rat: > 200 mg/l
	Acute Oral LD50 Rat: > 2000 mg/kg
Components	**Test Results**
Silicic Acid, Lithium Magnesium Sodium Salt (53320-86-8)	Dermal LLNA Mouse: 1.1 @ 10%w/w in propylene glycol
	Acute Dermal LD50 Rabbit: > 2000 mg/kg
	Acute Dermal PII Rabbit: 0.18
	Acute Inhalation LC50 Rat: > 200 mg/l 1.00 hr

Components	Test Results
Silicic Acid, Lithium Magnesium Sodium Salt (53320-86-8)	Acute Oral LD50 Rat: > 2000 mg/kg

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

Acute effects	Not classified
Local effects	Inhalation of dusts may cause respiratory irritation.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation	Not classified.
Mutagenicity	Not classified.
Reproductive effects	Not classified.
Symptoms and target organs	None known.
Further information	This product has no known adverse effect on human health.

12. Ecological Information

Ecotoxicological data

Product	Test Results
Laponite® RD	EC50 Algae: > 100 mg/l 72.00 hours similar substance
	LC50 Daphnia: > 100 mg/l 24.00 hours mortality
	LC50 Daphnia: > 100 mg/l 48.00 hours mobility
	LC50 Fish: 100 mg/l 96.00 hours estimated
	LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): > 100 mg/l

Components	Test Results
Silicic Acid, Lithium Magnesium Sodium Salt (53320-86-8)	EC50 Algae: > 100 mg/l 72.00 hours similar substance
	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.

Persistence and degradability	Not inherently biodegradable. The methods for determining the biological degradability are not applicable to inorganic substances.
Bioaccumulation / Accumulation	Not applicable.

13. Disposal Considerations

Disposal instructions	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.
Waste from residues / unused products	Dispose of in accordance with local regulations. Material should be recycled if possible. Can be landfilled, when in compliance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	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. 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)	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)

REACH - EU Not available.

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: 0
Flammability: 0
Instability: 0

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This data sheet contains changes from the previous version in section(s):	Product and Company Identification: Manufacturer Hazards Identification: OSHA regulatory status