




MATERIAL SAFETY DATA SHEET

Product name	LiQ liquid laundry detergent(Basic) (Front loader)
--------------	---

1. PRODUCT AND COMPANY IDENTIFICATION

A. Product Name	LiQ liquid laundry detergent(Basic) (Front loader)
B. Recommended use and limitations of product	
Recommended use of product	Laundry detergent (for cotton, linen, polyester, rayon, nylon, acrylic clothing)
Limitation of product	Do not use for purposes other than recommended use
C. Information on supplier (include information on local supplier in cases with imported products for emergency contact)	
Name of company	Aekyung Industrial Co., Ltd.
Address	242, Gamasan-ro, Guro-gu, Seoul, Korea
Emergency telephone number	Customer Service Team (080-024-1357)

2. HAZARDS IDENTIFICATION

A. GHS Classification	Skin irritation: Category 2 Eye irritation: Category 2
B. GHS Label and Hazard / Precautionary Statement Symbols	
Signal word	Warning
Hazard and Risk statements	H315 Causes skin irritation H319 Causes eye irritation
Precautionary statements	
Prevention precautionary statements	P264 Wash ... thoroughly after handling P280 Wear protective gloves/protective clothing/eye protection/face protection
Response precautionary statements	P302+P352 IF ON SKIN: Wash with plenty of soap and water P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P332+P313 If skin irritation occurs: Get medical advice/attention P337+P313 If eye irritation persists: Get medical advice/attention P362 Take off contaminated clothing and wash before reuse
Storage precautionary statements	Not applicable
Disposal precautionary statements	Not applicable
C. Other risk and hazards not included in the Hazard and Risk Classification (NFPA)	No data available

This MSDS was compiled in compliance with Article 41 of the Occupational Safety And Health Act of Korea.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical name / Usual name	CAS No.	Content (%)
Linear alkylbenzene sulfonate	68411-30-3	1 ~ 10
Polyoxyethylene alkyl ether	68551-12-2	1 ~ 10
Linear alcohol ethoxy sulfonate	68585-34-2	1 ~ 10
Purified water	7732-18-5	65~75
Detailed components other than those described above are trade secrets	-	-

4. FIRST AID MEASURES

A. Eyes contact	If in eyes, immediately wash with water and get medical advice.
B. Skin contact	If in contact with the skin for a prolonged period of time, wash with running water. Change clothes when the product is spilled. Get medical advice if skin irritation occurs.
C. Inhalation	Not applicable
D. Ingestion	Rinse mouth. If ingested, immediately get medical advice.
E. Information for doctors	Healthcare providers should have understanding of the material and should take protective measures.

5. FIRE-FIGHTING MEASURES

A. Suitable (Unsuitable) Extinguishing Media	Suitable extinguishing media: Use water, carbon dioxide, dry chemical powder or regulated powder to extinguish fire Unsuitable extinguishing media: No data available
B. Hazardous decomposition products	No data available
C. fire fighting measures	Exposed firefighters must wear proper protective equipment.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precaution, protective equipment	Take care as the floor can be slippery due to the detergent.
B. Environmental precautions	Do not allow large amounts of the product to inflow stream, lake or underground water.
C. Purification or removal measures	Sponge out the fluid with toilet paper or towel and wash any spillages with water.

This MSDS was compiled in compliance with Article 41 of the Occupational Safety And Health Act of Korea.

7. HANDLING AND STORAGE

- | | |
|------------------|---|
| A. Safe handling | Do not use for purposes other than laundry.
Do not allow children to use the product for recreational purposes such as making soap bubbles.
Be careful not to spatter the detergent in your eye while pumping.
Wear rubber gloves when doing laundry and wash thoroughly if you get the detergent on your hands.
Wash immediately if the detergent comes in contact with the exterior of the washing machine.
Take care as the floor can become slippery due to the detergent. |
| B. Safe storage | Store in a place that can't be reached by children.
Store in a place that is not exposed to direct sunlight and in a cool place during the summer and indoors during the winter. |

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

- | | |
|--|---|
| A. Chemical and biological exposure limits | |
| General exposure limits | No data available |
| Domestic and foreign exposure limits | No data available |
| B. Engineering controls | No data available |
| C. Personal protective equipment | |
| Respiratory protection | Not necessary under normal consumer use |
| Eye protection | Not necessary under normal consumer use |
| Hand protection | Not necessary under normal consumer use. Wear rubber gloves when hand-laundering. |
| Body protection | Not applicable |

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|--|------------------------|
| A. Appearance | |
| Physical state | Non-transparent liquid |
| Color | Green-blue |
| B. Odor | Floral |
| C. Odor threshold | No data available |
| D. pH | Weak alkali (9.0~9.6) |
| E. Melting point/Freezing point | 0 ~ -5°C |
| F. Initial boiling point and boiling point range | Over 100°C |
| G. Flash point | Not applicable |
| H. Evaporation rate | No data available |

This MSDS was compiled in compliance with Article 41 of the Occupational Safety And Health Act of Korea.

I. Flammability (solid, gas)	Not applicable
J. Upper/Lower limit of inflammability or explosion range	Not applicable
K. Vapor pressure	No data available
L. Solubility in water	Dissolves at room temperature (20°C)
M. Vapor density	No data available
N. Specific gravity	1.080~1.090 (20°C)
O. n-octanol/water partition coefficient	No data available
P. Autoignition temperature	Not applicable
Q. Decomposition temperature	No data available
R. Viscosity	100 ~ 300 cP
S. Molecular weight	No data available

10. STABILITY AND REACTIVITY

A. Chemical stability and risk of hazardous reaction	Stable
B. Conditions to avoid	No data available
C. materials to avoid	No data available
D. Hazardous decomposition products	No data available

11. TOXICOLOGICAL INFORMATION

A. Information on likely exposure route	The level of toxicity of liquid synthetic detergent is very low. Ingestion of excessive amount can cause temporary gastrointestinal irritation and in severe cases may cause diarrhea or vomiting. Contact with the eyes may cause congestion or pain due to temporary irritation. Prolonged skin contact with detergent diluted for laundry can cause mild skin irritation.
B. Health and Hazard Information	
Acute toxicity	
Oral	Not categorized for acute toxicity. (Calculated ATEmix value of the mixture used in this product: LD50 over 2,000 mg/kg, Rat)
Dermal	No data available
Inhalation	No data available
Skin corrosion or irritation	Does not cause irritation (Based on MFDS Public Notification No. 2009-116 Toxicity Test Standard for Drugs and Other Pharmaceutical Products, Standard Usage)
Serious eye damage or irritation	Can cause irritation in the eye when exposed for short period of time.
Respiratory sensitization	Not applicable
Skin sensitization	No data available

This MSDS was compiled in compliance with Article 41 of the Occupational Safety And Health Act of Korea.

Carcinogenicity	Not categorized (does not include carcinogenic material)
Germ cell mutagenicity	Not categorized (does not include germ cell mutagenic material)
Reproductive toxicity	Not categorized (does not include reproductive toxic material)
Specific target organ toxicity (single exposure)	Not applicable
Specific target organ toxicity (repeated exposure)	Not applicable
Aspiration hazard	Not applicable

12. ECOLOGICAL INFORMATION

A. Ecological toxicity	No data available
B. Persistence and degradability	No data available
C. Bioaccumulation	
Biodegradability	Results of biodegradability test based on KSM 2714 Korea Industrial Standard: Over 90%
D. Mobility in soil	No data available
E. Other hazardous effects	No data available

Based on scientific data obtained for biotoxicity and bioconcentration, the materials included in this product are considered to impose no hazardous effects on the environment when disposed through normal channels. This product uses surfactants that are highly biodegradable and most components are biodegraded in the sewage treatment system.

13. DISPOSAL CONSIDERATIONS

A. Disposal methods	Recycle container.
B. Disposal considerations	Do not dispose a large amount of this product in stream, lake or underground water.

14. TRANSPORT INFORMATION

A. UN No.	No data available
B. Proper Shipping Name	No data available
C. Transport hazard class	No data available
D. Packing group	No data available
E. Marine pollutant	No data available
F. Information or special safety measures the user should be informed of on transport or transportation method.	
Emergency fire-fighting measures	No data available
Emergency leakage measures	No data available

This MSDS was compiled in compliance with Article 41 of the Occupational Safety And Health Act of Korea.

15. REGULATORY INFORMATION

A. Regulation based on Occupational Safety and Health Act of Korea	Not applicable
B. Regulation based on the Toxic Chemicals Control Act of Korea	Not applicable
C. Regulation based on Dangerous Goods Safety Management Act of Korea	Not applicable
D. Regulation based on Wastes Management Act of Korea	Not applicable
E. Regulation based on other domestic and foreign laws	
Domestic regulations	
Control of Persistent Organic Pollutants Control Act of Korea	Not applicable
Quality Management and Safety Control of Industrial Products Act of Korea	Complies with legal requirements
Foreign regulations	
U.S. OSHA Information	Not applicable
U.S. CERCLA Information	Not applicable
U.S. EPCRA 302 Information	Not applicable
U.S. EPCRA 304 Information	Not applicable
U.S. EPCRA 313 Information	Not applicable
Rotterdam Convention	Not applicable
Stockholm Convention	Not applicable
Montreal Convention	Not applicable
EU Regulations	Not applicable
Risk (R) Phrases	Not applicable
Safety (S) Phrases	Not applicable

16. OTHER INFORMATION

A. Source of data

Ministry Of Environment of Korea Public Notification, EU(ECHA-SVHC), IARC, NTP, ECHA, EU(ESIS-CLP/GHS), EPA(IRIS), ChemSec(SIN LIST), EPA(TRI LIST), ECOTOX Database, IUCLID Chemical Data Sheet, TOXNET, U.S. National Library of Medicine, Chemicals Information System of the National Institute of Environmental Research of Korea

This MSDS was compiled in compliance with Article 41 of the Occupational Safety And Health Act of Korea.

B. Originally written on 2013-06-03

C. Number of revisions and final revision written on

Number of revisions 4

Final revision written on 2017.04.03

○ This Material Safety Data Sheet (MSDS) is provided based on the knowledge and guidelines of Aekyung Industrial Co., Ltd. This document does not necessarily include information or regulations of all countries of the world. This document is intended for use to ensure proper protection and prevention of exposure and losses in property of the user. Aekyung Industrial Co., Ltd. cannot be held responsible for injuries or damages of property caused by misuse or use intended for harmful consequences.