SAFETY DATA SHEET

SILSOFT SILK

(In accordance with Article 41, Paragraph 1, of Industrial Safety and Health Act)

Section 1. Chemical product and company identification

A. Product name : **SILSOFT SILK**
MSDS Number : 000000055030

B. Material uses : Personal care

C. Company/undertaking identification

Manufacturer/Importer/Distributor Information	:	Momentive Performance Materials Korea Co., Ltd. 8FL, Daeryung Post Tower 6-Cha, 298, Beotkkot-ro, Geumcheon-gu, Seoul 153-715 Korea
Contact person	:	commercial.services@momentive.com
Telephone	:	+82-2-6201-4600
Telefax	:	+82-2-6201-4601
Emergency telephone number	:	+65-3158-1074 / +82-2-6201-4600
Responsible Department	:	Product Stewardship & Compliance

Section 2. Hazards identification

A. Hazard classification : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

B. GHS label elements, including precautionary statements

Symbol :

Signal word : Danger
Hazard statements : Causes serious eye damage.

Precautionary statements

General : Not applicable.

Prevention : Wear eye or face protection.
Wash hands thoroughly after handling.

Response : **IF IN EYES:**
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or physician.

Storage : Not applicable.

Disposal : Not applicable.

C. Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Chemical name : Silicone Polyether Quaternary Amine Dispersion

Hazardous ingredient name	CAS number	% by weight
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	>=1 - <10
Poly(oxy-1,2-ethanediyl), .alpha.-decyl-.omega.-hydroxy-	26183-52-8	>=1 - <10
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., inner salts	61789-40-0	>=1 - <10

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

A. Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

B. Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

C. Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

D.	**Ingestion**	:	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
E.	**Notes to physician**	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Specific treatments	:	No specific treatment.
	Protection of first aid personnel	:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

A. **Extinguishing media**

Suitable extinguishing media	:	Use dry chemical, CO_2, alcohol-resistant foam or water spray (fog).
Unsuitable extinguishing media	:	water jet

B.	**Specific hazards arising from the chemical**	:	In a fire or if heated, a pressure increase will occur and the container may burst.
	Hazardous thermal decomposition products	:	Decomposition products may include the following materials: carbon dioxide carbon monoxide Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

C.	**Special protective equipment for fire-fighters**	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Special precautions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	Remark	:	Not available

Section 6. Accidental release measures

A.	**Personal precautions, protective equipment and**	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary

	emergency procedures		and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
B.	**Environmental precautions**	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

C. **Methods and material for containment and cleaning up**

Small spill	:	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.
Large spill	:	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13 of SDS). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

Section 7. Handling and storage

A. **Precautions for safe handling**

Protective measures	:	Put on appropriate personal protective equipment (see section 8 of SDS). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

B.	**Conditions for safe storage, including any incompatibilities**	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

A. **Control parameters**

Occupational exposure limits

None.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

B. Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

C. Personal protective equipment

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and chemical properties

A. Appearance

Physical state : Liquid

Color : Light yellow

B. Odor : Amine-like.

C. Odor threshold : Not available

D.	**pH**	:	6 - 8
E.	**Melting/freezing point**	:	Not determined.
F.	**Boiling point/boiling range**	:	100 °C
G.	**Flash point**	:	Aqueous Solution does not flash
	Burning time	:	Not available
	Burning rate	:	Not available
H.	**Evaporation rate**	:	> 1 (n-Butyl acetate=1)
I.	**Flammability (solid, gas)**	:	Not available
J.	**Lower and upper explosive (flammable) limits**	:	**Lower:** Not available **Upper:** Not available
K.	**Vapor pressure**	:	Not available
L.	**Solubility**	:	Not available
	Solubility in water	:	Soluble
M.	**Vapor density**	:	1 [Air = 1]
N.	**Relative density**	:	1.004
O.	**Partition coefficient: n-octanol/water**	:	Not available
P.	**Auto-ignition temperature**	:	Not available
Q.	**Decomposition temperature**	:	Not available
	SADT	:	Not available
R.	**Viscosity**	:	**Dynamic:** Not available **Kinematic:** Not available
S.	**Molecular weight**	:	Not available
T.	**Density**	:	1.004 g/cm3

Other information

No additional information.

Section 10. Stability and reactivity

A.	**Chemical stability**	:	The product is stable.
	Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
B.	**Conditions to avoid**	:	No specific data.
C.	**Incompatible materials**	:	No specific data.
D.	**Hazardous decomposition products**	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

A.	**Information on the likely routes of exposure**	:	Not available

Potential acute health effects

Inhalation	:	May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
Ingestion	:	May cause burns to mouth, throat and stomach.
Skin contact	:	No known significant effects or critical hazards.
Eye contact	:	Causes serious eye damage.

Over-exposure signs/symptoms

Inhalation	:	No specific data.
Ingestion	:	Adverse symptoms may include the following: stomach pains
Skin contact	:	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eye contact	:	Adverse symptoms may include the following: pain watering redness

B. Health hazards

Acute toxicity

Conclusion/Summary : Not available

Irritation/Corrosion

Conclusion/Summary

Skin	:	Not available
eyes	:	Not available
Respiratory	:	Not available

Sensitization

Conclusion/Summary

Skin	:	Not available
Respiratory	:	Not available

Mutagenicity

Conclusion/Summary : Not available

Carcinogenicity

Conclusion/Summary : Not available

Reproductive toxicity

Conclusion/Summary : Not available

Teratogenicity

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)
Not available

Aspiration hazard
Not available

Potential chronic health effects

Chronic toxicity

Conclusion/Summary	:	Not available
General	:	No known significant effects or critical hazards.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.
Other information	:	Not available

ATE value

Route	Result
Oral	mg/kg

Section 12. Ecological information

A. Ecotoxicity

Conclusion/Summary : Not available

B. Persistence and degradability

Conclusion/Summary : Not available

D. Mobility in soil

Soil/water partition coefficient (KOC) : Not available

E. Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

A. Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered

when recycling is not feasible.

B. Disposal precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

*PG : Packing group

Special precautions for user : This product is not regarded as dangerous goods according to the ICAO/IATA, ADR/RID, ADNR and IMDG regulations on the transport of dangerous goods.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA Article 37 : None required.
ISHA Article 38 : None required.

B. Regulation according to TCCA

TCCA Toxic chemicals : Not applicable
TCCA Observational chemicals : None required.
TCCA Article 32 (Banned) : None required.
TCCA Article 32 (Restricted) : None required.
TCCA Article 17 (TRI) : None required.
Korea inventory : All components are listed or exempted.

C. Dangerous Materials Safety Management Act : Not regulated.

D. Wastes regulation : Dispose of contents and container in accordance with all local, regional, national and international regulations.

E. Regulation according to other foreign laws

International lists : United States inventory (TSCA 8b) At least one component is not listed. This product is intended only for personal care applications. It is not intended for industrial use; therefore, it is not subject to TSCA.

Australia inventory (AICS) At least one component is not listed.
Canada inventory At least one component is not listed. (Quantity restricted)
Japan inventory At least one component is not listed.
China inventory (IECSC) (Quantity restricted) Please contact your supplier for further information on the inventory status of this material.
Korea inventory All components are listed or exempted.
Philippines inventory (PICCS) At least one component is not listed.
New Zealand Inventory (NZIoC) At least one component is not listed.
Taiwan inventory (CSNN) At least one component is not listed.

Section 16. Other information

A.	**References**	:	Not available
B.	**Date of issue/Date of revision**	:	2015/12/07
C.	**Version**	:	1.0
	Date of printing	:	2016/10/20
D.	**Other**		
	Key to abbreviations	:	ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations

Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.