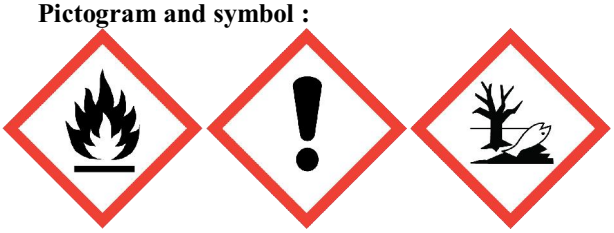
MATERIAL SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

A. GHS product identifier FIRSTCLASS SCRATCH REMOVER
B. Recommended use of the chemical and restrictions on use
Recommended use removing scratch or stain of the car surface
Restrictions on use Limitation of use for other purpose
C. Manufacturers
Company name BULLSONE
Address 890-12 Dabong Tower, Daechi-dong Gangnam-gu Seoul Korea
Emergency phone number 822-2106-7777
Respondent HanDong Jin
Fax 822-2106-7911

2. Hazards identification

A. GHS classification of the substance/mixture
Flammable liquids : Category 3
Skin corrosion/irritation : Category 2
Hazardous to the aquatic environment (acute hazard) : Category 2
Hazardous to the aquatic environment (chronic) : Category 2
B. GHS label elements, including precautionary statements
Pictogram and symbol :



Signal word : Warning
Hazard statements :
H226 Flammable liquid and vapour
H315 Causes skin irritation.
H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
Precautionary statements
Precaution
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
Treatment
P302+P352 If on skin: Wash with plenty of soap and water.
P303+P361+P353 If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P321 Specific treatment (seemsds on this label).
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370+P378 In case of fire: Use fire-extinguishing agents for extinction.

P391 Collect spillage.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose the contents/container in accordance with local/regional/national/international regulations.

C. Other hazard information not included in hazard classification (NFPA)

Health 2
Flammability 1
Reactivity Not available

3. Composition/information on ingredients

Chemical Name	Common Name(Synonyms)	CAS number	EC number	Content (%)
Antimony oxide calcium titanate		66402-68-4	266-340-9	1~10
Trisodium citrate dihydrate		6132-04-3		0.1~1
Polysiloxane	Silicone oil	63148-62-9	613-156-5	1~10
Amino modified silicone				1~5
Naphtha (petroleum), hydrodesulfurized heavy		64742-82-1	265-185-4	10~20
Polysiloxane	Silicone oil			1~5
Emulsifier				1~5
Water		7732-18-5	231-791-2	50~70

4. First aid measures

A. Eye contact

- Call emergency medical service.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

B. Skin contact

- If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- If skin irritation occurs: Get medical advice/ attention.
- Call emergency medical service.
- Remove and isolate contaminated clothing and shoes.
- For minor skin contact, avoid spreading material on unaffected skin.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Wash skin with soap and water.

C. Inhalation

- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Keep victim warm and quiet.

D. Ingestion

- Call emergency medical service.

E. Indication of immediate medical attention and notes for physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire fighting measures

A. Suitable (and unsuitable) extinguishing media

- Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
- Use dry sand or earth to smother fire.

B. Specific hazards arising from the chemical

- Flammable liquid and vapour
- May violently polymerize and result in fire and explosion.
- Vapors may travel to a source of ignition and ignite.
- Material may produce irritating and highly toxic gases from decomposition by heat and combustion during burning
- May form explosive mixtures at temperatures at or above the flashpoint.
- Containers may explode when heated.
- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
- Spilled material may create fire or explosion hazard.
- May cause vapor explosion hazard indoors, outdoors or in sewers.
- Some of these materials may burn, but none ignite readily.
- Vapors may form explosive mixtures with air.
- Non-combustible, substance itself does not burn but may decompose upon heating, then produce corrosive and/or toxic fumes.

C. Special protective equipment and precautions for fire-fighters

- Rescuers should put on appropriate protective gear.
- Evacuate area and fight fire from a safe distance.
- Many liquids are lighter than water.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas
- Substance may be transported hot.
- Substance may be transported in a molten form.
- Some may be transported hot.
- Dike fire-control water for later disposal; do not scatter the material.
- Move containers from fire area if you can do it without risk.
- Fire involving Tanks; Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Fire involving Tanks; Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks; Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Fire involving Tanks; Always stay away from tanks engulfed in fire.
- Fire involving Tanks; For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

- The very fine particles may cause a fire or explosion, eliminate all ignition sources.
- Clean up spills immediately, observing precautions in Protective Equipment section.
- Eliminate all ignition sources.
- All equipment used when handling the product must be grounded.
- Stop leak if you can do it without risk.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- A vapor suppressing foam may be used to reduce vapors.
- Cover with plastic sheet to prevent spreading.
- Prevent dust cloud.
- Please note that there are materials and conditions to avoid.

B. Environmental precautions and protective procedures

- Avoid release to the environment.
- Prevent entry into waterways, sewers, basements or confined areas.

C. The methods of purification and removal

- Collect spillage.
- Dike and collect water used to fight fire.
- Absorb spills with inert material (e.g., dry sand or earth), then place in a chemical waste container.
- Absorb the liquid and scrub the area with detergent and water.
- Large Spill; Dike far ahead of liquid spill for later disposal.

- Use clean non-sparking tools to collect absorbed material.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.
- Powder Spill; Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- Small Spill; Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

7. Handling and storage

A. Precautions for safe handling

- Use explosion-proof electrical/ventilating/lighting equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Wash thoroughly after handling.
- Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.
- Follow all MSDS/label precautions even after container is emptied because they may retain product residues.
- Avoid prolonged or repeated contact with skin.
- All equipment used when handling the product must be grounded.
- Please note that there are materials and conditions to avoid.
- Please work with reference to engineering controls and personal protective equipment.
- Be careful to high temperature.
- Be careful to heat.
- You need measurement of air concentration and ventilation in low, closed and confined areas due to lack of oxygen.

B. Conditions for safe storage

- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Keep container tightly closed.
- Store in a well-ventilated place. Keep cool.
- Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner, or properly disposed of.

8. Exposure controls/personal protection

A. Occupational Exposure limits

Korea regulation

Amino modified silicone CAS No.69430-37-1;TWA:10mg/m³(실리콘)/CAS No.67-56-1;TWA:200ppm(260mg/m³)STEL:250ppm(310mg/m³)

ACGIH regulation

Amino modified silicone CAS No. 67-56-1; TWA:200 ppm, STEL: 250 ppm

Biological exposure index

Amino modified silicone CAS No. 67-56-1; 15 mg/L

OSHA regulation

Amino modified silicone CAS No. 67-56-1; TWA:200 ppm(260 mg/m³)

NIOSH regulation

Amino modified silicone CAS No. 67-56-1; TWA: 200 ppm(260 mg/m³), STEL: 250 ppm(325 mg/m³)

EU regulation : Not available

Other : Not available

B. Appropriate engineering controls

- Facilities for storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

C. Personal protective equipment

Respiratory protection

- Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment when necessary.
- In case exposed to gaseous/liquid material, the respiratory protective equipments as follow are recommended. escape full facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) or escape half facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) or direct full facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) half facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) or powered air-purifying gas mask.
- In lack of oxygen(< 19.5%), wear the supplied-air respirator or self-contained breathing apparatus.oxygen

Eye protection

- Wear enclosed safety goggles to protect from gaseous state organic material causing eye irritation or other disorder.
- An eye wash unit and safety shower station should be available nearby work place.

Hand protection

- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

Body protection

- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.

9. Physical and chemical properties

A. Appearance
Description Liquid
Color white paste
B. Odor
C. Odor threshold Not available
D. pH 8.1 ± 0.5
E. Melting point/freezing point -7℃ ~ -4℃
F. Initial boiling point and boiling range 99 ℃ ~ 100 ℃
G. Flash point Not available
H. Evaporation rate Not available
I. Flammability (solid, gas) Not applicable
J. Upper/lower flammability or explosive limits Not available
K. Vapor pressure Not available
L. Solubility (ies) Not available
M. Vapor density Not available
N. Specific gravity 0.97 ± 0.02
O. Partition coefficient: n-octanol/water Not available
P. Auto ignition temperature Not available
Q. Decomposition temperature Not available
R. Viscosity 78,000 cP
S. Molecular weight Not available

10. Stability and reactivity

A. Chemical stability and Possibility of hazardous reactions:

- Flammable liquid and vapour
- May violently polymerize and result in fire and explosion.
- May form explosive mixtures at temperatures at or above the flashpoint.
- Containers may explode when heated.
- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
- Spilled material may create fire or explosion hazard.
- May cause vapor explosion hazard indoors, outdoors or in sewers.
- Some of these materials may burn, but none ignite readily.
- Vapors may form explosive mixtures with air.
- Non-combustible, substance itself does not burn but may decompose upon heating, then produce corrosive and/or toxic fumes.

- Fire will produce irritating, corrosive and/or toxic gases.

B. Conditions to avoid:

- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

C. Incompatible materials:

- Combustibles, reducing agents

D. Hazardous decomposition products:

- Material may produce irritating and highly toxic gases from decomposition by heat and combustion during burning
- Corrosive and/or toxic fume
- Irritating and/or toxic gases

11. Toxicological information

A. Information of Health Hazardous:

Acute toxicity

Oral [Not classified] (ATEmix = 333,333.33 mg/kg bw)

- **Antimony oxide calcium titanate** : Rat LD_{50} > 2,000 mg/kg (암컷, OECD TG 425, GLP, read-across; CAS No. 1305-78-8)
- **Polysiloxane** : Rat LD_{50} > 5,000 mg/kg
- **Naphtha (petroleum), hydrodesulfurized heavy** : Rat LD_{50} > 5,000 mg/kg (OECD TG 401, GLP)
- **Polysiloxane** : Rat LD_{50} > 5,000 mg/kg (16 CFR 1500.3)
- **Emulsifier** : Rat LD_{50} = 5,000 mg/kg

Dermal [Not classified]

- **Antimony oxide calcium titanate** : Rabbit LD_{50} > 2,500 mg/kg (OECD TG 402, read-across; CAS No. 7719-01-9)
- **Polysiloxane** : Rabbit LD_{50} > 10,000 mg/kg Acute toxicity is very low
- **Naphtha (petroleum), hydrodesulfurized heavy** : Rabbit LD_{50} > 2,000 mg/kg (OECD TG 402, GLP)

Inhalation [Not classified]

- **Antimony oxide calcium titanate** : Rat LC_{50} > 3.5 mg/L/4hr (OECD TG 403, GLP, read-across ; CAS No. 1302-67-6)
- **Polysiloxane** : Rat LC_{50} > 535 mg/L Acute toxicity is very low
- **Naphtha (petroleum), hydrodesulfurized heavy** : Rat LC_{50} > 5.16 mg/L/4hr (OECD TG 403, GLP)
- **Polysiloxane** : Rat LD_{50} = mg/kg ATE = 2000 mg/l, (Caculation method)

Skin corrosion/ irritation [Category 2]

- **Antimony oxide calcium titanate** : In test on skin irritation with rabbits, skin irritations were not observed.(OECD TG 431,GLP)
- **Trisodium citrate dihydrate** : May cause skin irritation. No information regarding skin irritation and other potential effects was found.
- **Polysiloxane** : In test on skin irritation with rabbits, skin irritations were not observed.
- **Amino modified silicone** : May be harmful in contact with skin. May cause slight irritation. Absorption through skin may cause damage to the following organs: retina, central nervous system (CNS).
- **Naphtha (petroleum), hydrodesulfurizedheavy** : In skin irritation test with rabbits, skin irritations were observed.(OECD TG 404, GLP)
- **Polysiloxane** : In skin irritation test with rabbits, skin irritations were not observed.(16 CFR 1500.41)
- **Emulsifier** : In test on skin irritation with rabbits, slight skin irritations were observed. - does not require labelling.

Serious eye damage/ irritation [Not classified]

- **Antimony oxide calcium titanate** : In test on eyes irritation with rabbits, eyes irritations were not observed. (OECD TG 405)
- **Trisodium citrate dihydrate** : Dust may cause mechanical irritation.

-**Polysiloxane** : In test on eyes irritation with rabbits, eyes irritations were not observed.
- **Amino modified silicone** : Direct contact may cause severe irritation.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : In test on eyes irritation with rabbits, eyes irritations were net observed.(OECD TG 405, GLP)
-**Polysiloxane** : In eye irritation test with rabbits, eye irritations were not observed.(16 CFR 1500.42)
- **Emulsifier** : In test on eyes irritation with rabbits, slight eyes irritations were observed. - does not require labelling.

Respiratory sensitization [Not classified]

Skin sensitization [Not classified]

- **Antimony oxide calcium titanate** : In test on skin sensitization mouse , skin sensitization were not observed.(OECD TG 429, GLP)
-**Polysiloxane** : In skin sensitisation test with animals, skin sensitization were not observed.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : In sensitisation test with guinea pigs, skin sensitisation were not observed.(OECD TG 406, GLP)
-**Polysiloxane** : In skin sensitisation test with guinea pigs, skin sensitization were not observed. (OECD TG 406)
-**Emulsifier** : In skin sensitization, skin sensitization were not observed.(OECD TG 406)(Source: Untersuchungsbericht/Th. Goldschmidt AG)

Carcinogenicity [Not classified]

EU

- Naphtha (petroleum), hydrodesulfurizedheavy :Carc. 1B

Antimony oxide calcium titanate: In test on carcinogenicity with guinea pigs, carcinogenicity was not observed.(OECD TG 413)

Naphtha (petroleum), hydrodesulfurizedheavy : In a carcinogenicity with mouse, unleaded gasoline is not expected to display carcinogenic properties.(OECD TG 451)

Mutagenicity [Not classified]

- **Antimony oxide calcium titanate** : Negative reactions were observed in, in vitro (Bacterial reverse mutation assay, OECD TG 471,GLP,read-across; CAS No. 1302-67-6, 1305-78-8; in vitro mammalian chromosome aberration test, read-across; CAS No. 1305-62-0; mammalian cell gene mutation assay, OECD TG 476, GLP, read-across; CAS No. 21645-51-2; Neutral comet assay(without metabolic activation), read-across; CD4+T cells). Positive reactions were observed in, in vitro(in vitro mammalian chromosome aberration test(without metabolic activation), OECD TG 473, read-across; CAS No. 7466-70-0; in vitro mammalian cell micronucleus test(without metabolic activation), OECD TG 487,read-across; Al2(SO4)3) and in vivo(female, Mammalian Erythrocyte Micronucleus Test(for the nano-sized materials (30 and 40 nm) with evidence of a dose-response relationship for MN), OECD TG, 474, read-across; 1344-28-1; female, chromosome aberration assay(for the nano-sized materials with evidence of a positive dose-response relationship for CAs), OECD TG 475, read-across; 1344-28-1).
-**Polysiloxane** : Ames test results negative
- **Naphtha (petroleum), hydrodesulfurized heavy** : Negative reactions were observed in vitro test(Bacterial gene mutation assay and mammalian cell gene mutation assay)and in vivo test(Erythrocyte Micronucleus Assay(GLP) and Mammalian Bone Marrow Chromosome Aberration Test(OECD TG 475)).
-**Polysiloxane** : In reverse mutation assay, negative reactions were observered regardless of having metabolic activation.
-**Emulsifier** : The substance has no mutagenic activity.(Ames Test)

Reproductive toxicity [Not classified]

- **Antimony oxide calcium titanate** : In reproductive toxicity test(OECD TG 426 and 452, GLP, read-across; CAS No. 31142-56-0; OECD TG 422, GLP, read-across; 1327-41-9) and developmental toxicity test(OECD TG 414, read-across; CAS No. 1305-78-8; OECD TG 426 and 452, GLP, read-across; CAS No. 31142-56-0) with rats, there were no significant effects.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : In developmental inhalation toxicity study with rats, unleaded gasoline vapors did not produce evidence of developmental toxicity.(OECD TG 414, GLP)

Specific target organ toxicity (single exposure) [Not classified]

- **Antimony oxide calcium titanate** : In acute inhalation toxicity with rats, slight respiratory distress effect was observed; all signs had resolved within 14days.(OECD TG 403)
- **Amino modified silicone** : Inhalation: May be harmful if inhaled. Vapor / mist irritates the respiratory tract. Inhalation can cause damage to the following organs: retina, central nervous system. Excessive exposure to vapors may cause drowsiness. Ingestion: May be harmful if swallowed. Ingestion may damage the following organs: retina, central nervous system (CNS)
- **Naphtha (petroleum), hydrodesulfurized heavy** : In acute inhalation toxicity study with rats, There were no remarkable clinical signs noted during the course of treatment and no mortality.(OECD TG 403, GLP)

Specific target organ toxicity (repeat exposure) [Not classified]

- **Antimony oxide calcium titanate** : In an oral repeated dose toxicity study with rats during the postnatal period, clinical signs(mild alopecia and prophyrin staining, slight dehydration, diarrhoea) were observed.
- **Amino modified silicone** : Skin: Over-exposure due to absorption may cause internal damage. Long-term repeated exposure may cause severe irritation. Inhalation: Prolonged or repeated exposure by inhalation may cause internal injuries. Ingestion: If ingested repeatedly or drink too much, internal damage may be induced.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : In repeated dose inhalation toxicity study with rat and mouse, No compound-related changes were seen in mortality, hematology or clinical chemistry parameters in either species.(OECD TG 453)

Aspiration Hazard [Not classified]

12. Ecological information

A. Ecological toxicity

- Acute toxicity : [Category 2] (ATEmix = 2.50000mg/ℓ)
- Chronic toxicity : [Category 2]

Fish Not available

- **Naphtha (petroleum), hydrodesulfurizedheavy :** 96hr-LC_{50} = 2.5 mg/L

crustacean

- **Naphtha (petroleum), hydrodesulfurizedheavy :** 96hr-LC_{50} (other) = 4.3 mg/L

Algae Not available

B. Persistence and degradability

Persistence

- **Amino modified silicone** : Environmental migration : Siloxane is removed from water by sludge-flocculation or sedimentation.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : High persistency (log Kow is more than 4 estimated.) (Log Kow =2.1 ~ 6)

Degradability

- **Amino modified silicone** :Siloxane degrades in soil.

C. Bioaccumulative potential

Bioaccumulation

- **Amino modified silicone** : No potential for bioaccumulation.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : Bioaccumulation is expected to be high according to the BCF ≥ 500 (BCF = 10 ~ 2500)

Biodegradation

- **Antimony oxide calcium titanate** : This substance is not considered to be biodegradable.
- **Naphtha (petroleum), hydrodesulfurizedheavy** : As well-biodegraded, it is expected to have low accumulation potential in living organisms (= 77.05% biodegradation was observed after 28 days) (OECD TG 301F, GLP)

D. Mobility in soil

- **Naphtha (petroleum), hydrodesulfurizedheavy** : High potency of mobility to soil. (Koc = 80030) (estimated)

E. Other hazardous effect

- **Amino modified silicone** : Acute: Very toxic to aquatic organisms. Chronic: Very toxic to aquatic life due to long-term effects. Impact on wastewater treatment plants: No adverse effects in bacteria are expected. Siloxane contained in this product does not affect the BOD. - **Emulsifier** : - TOXICOLOGICAL INFORMATION; Remarks: Proper use provided, no adverse health effects have

been observed or have been come to our knowledge. The product is used as a raw material in the cosmetic and pharmaceutical industry. - ECOLOGICAL INFORMATION; Remarks: The product is considered to be a weak water pollutant (German law). Do not allow to enter soil, waterways or waste water canal.

13. Disposal considerations

A. Disposal method

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

B. Disposal precaution

- Consider the required attentions in accordance with waste treatment management regulation.

14. Transport information

A. UN Number 1993
B. UN Proper shipping name FLAMMABLE LIQUID, N.O.S.
C. Transport Hazard class 3
D. Packing group III
E. Marine pollutant YES
F. Special precautions
in case of fire F-E
in case of leakage S-E

15. Regulatory information

A. Occupational Safety and Health Regulation
Amino modified silicone : Administration subject listed ; CAS No.67-56-1
Amino modified silicone : Work environment monitoring listed (6 months) ; CAS No. 67-56-1
Amino modified silicone : Health examination agent (12 months) ; CAS No. 67-56-1
Amino modified silicone : Occupational exposure limits listed ; CAS No. 67-56-1/ CAS No. 69430-37-1
B. Toxic Chemical Control Act
Antimony oxide calcium titanate : Existing Chemical Substance (KE-05377)
Polysiloxane : Existing Chemical Substance (KE-31068)
Amino modified silicone : Existing Chemical Substance ; CAS No. 69430-37-1: KE-31129/CAS No. 67-56-1: KE-23193/CAS No. 556-67-2: KE-26606
Amino modified silicone : Accident Precaution Chemicals ; CAS No. 67-56-1
Amino modified silicone : Toxic Chemicals ; CAS No. 67-56-1(85% or more in mixtures)
Naphtha (petroleum), hydrodesulfurizedheavy : Existing Chemical Substance (KE-25620)
Water : Existing Chemical Substance (KE-35400)
C. Dangerous Material Safety Management Regulation
Trisodium citrate dihydrate : Dangerous Material Safety Management Regulation
Amino modified silicone : Dangerous Material Safety Management Regulation CAS No. 67-56-1; Alcohols class 400ℓ / CAS No. 556-67-2; Petroleum class 4-2 (non-water soluble liquid) 1000ℓ
Polysiloxane : Dangerous Material Safety Management Regulation 2000ℓ
D. Wastes Control Act
Amino modified silicone : Wastes Control Act CAS No. 67-56-1; Controlled wastes
Polysiloxane : Wastes Control Act Controlled wastes
E. Other regulation (internal and external)
Internal information
Persistant Organic Pollutants Acts Not regulated
External information
EU classification(classification)
Antimony oxide calcium titanate : Classification Not classified

Naphtha (petroleum), hydrodesulfurizedheavy : Classification Carc. Cat. 2; R45 Muta. Cat. 2; R46 Xn; R65
Polysiloxane : Classification Not classified
Water : Classification Not classified

EU classification(risk phrases)
Antimony oxide calcium titanate : Hazard statements Not applicable
Naphtha (petroleum), hydrodesulfurizedheavy : Hazard statements R45 R46 R65
Polysiloxane : Hazard statements Not applicable
Water : Hazard statements Not applicable

EU classification(safety phrases)
Antimony oxide calcium titanate : Precautionary statements Not applicable
Naphtha (petroleum), hydrodesulfurizedheavy : Precautionary statements S53 S45
Polysiloxane : Precautionary statements Not applicable
Water : Precautionary statements Not applicable

EU SVHC list Not regulated
EU Authorisation List Not regulated
EU Restriction list
Naphtha (petroleum), hydrodesulfurizedheavy :EU Restriction list Regulated
U.S.A management information (OSHA Regulation) Not regulated
U.S.A management information (CERCLA Regulation) Not regulated
U.S.A management information (EPCRA 302 Regulation) Not regulated
U.S.A management information (EPCRA 304 Regulation) Not regulated
U.S.A management information (EPCRA 313 Regulation) Not regulated
Substance of Roterdame Protocol Not regulated
Substance of Stockholme Protocol Not regulated
Substance of Montreal Protocol Not regulated

Foreign Inventory Status
Antimony oxide calcium titanate

Trisodium citrate dihydrate
China management information Inventory of Existing Chemical Substances (IECSC): Present 11057
Australia management information Inventory of Chemical Substances (AICS): Present
New Zealand management information Inventory of Chemicals (NZIoC): May be used as a single component chemical under an appropriate group standard
Philippines management information Inventory of Chemicals and Chemical Substances (PICCS): Present

Polysiloxane
U.S.A management information Section 8(b) Inventory (TSCA): Present [XU]
Japan management information Existing and New Chemical Substances (ENCS): (7)-476
China management information Inventory of Existing Chemical Substances (IECSC): Present 08512
Canada management information Domestic Substances List (DSL): Present
Australia management information Inventory of Chemical Substances (AICS): Present
New Zealand management information Inventory of Chemicals (NZIoC): Inventory of Chemicals (NZIoC): HSNO Approval: HSR003036
Philippines management information Inventory of Chemicals and Chemical Substances (PICCS): Present

Amino modified silicone
U.S.A management information Section 8(b) Inventory (TSCA): Present
Japan management information Existing and New Chemical Substances (ENCS):
China management information Inventory of Existing Chemical Substances (IECSC): Present
Canada management information Domestic Substances List (DSL): Present
Australia management information Inventory of Chemical Substances (AICS): Present
New Zealand management information Inventory of Chemicals (NZIoC): HSNO Approval: Present
Philippines management information Inventory of Chemicals and Chemical Substances (PICCS): Present

Naphtha (petroleum), hydrodesulfurized heavy
U.S.A management information Section 8(b) Inventory (TSCA): Present
Japan management information Existing and New Chemical Substances (ENCS): (9)-1698
China management information Inventory of Existing Chemical Substances (IECSC): Present
Canada management information Domestic Substances List (DSL): Present
Australia management information Inventory of Chemical Substances (AICS): Present

New Zealand management information Inventory of Chemicals (NZIoC): May be used as a single component chemical under an appropriate group standard.
Philippines management information Inventory of Chemicals and Chemical Substances (PICCS): Present

Polysiloxane

Germany TA Luft : Not classified (paragraph 5.2.5)
Germany German storage class : 10
Germany Water contaminating class : 1 (slightly water contaminating)

Emulsifier

Germany German storage class : 10
Germany TA Luft; Class: Paragraph 5.2.5 (no class)
Germany Water contaminating class : 1 (Classification acc. to German law) / KBwS-No.: 3.222

Water

U.S.A management information Section 8(b) Inventory (TSCA): Present
Japan management information Industrial Safety and Health Law Substances (ISHL): 2-(4)-1220
China management information Inventory of Existing Chemical Substances (IECSC): Present 32224
Canada management information Domestic Substances List (DSL): Present
Australia management information Inventory of Chemical Substances (AICS): Present
New Zealand management information Inventory of Chemicals (NZIoC): May be used as a single component chemical under an appropriate group standard.
Philippines management information Inventory of Chemicals and Chemical Substances (PICCS): Present

16. Other information

A. Information source and references

AKRON; http://ull.chemistry.uakron.edu/erd
International Uniform Chemical Information Database(IUCLID); http://esis.jrc.ec.europa.eu/ (Initial boiling point and boiling range) , (Solubility (ies)) , (Specific gravity) , (Molecular weight)
Korea Occupational Health & Safety Agency; http://www.kosha.net
National Chemicals Information System; http://ncis.nier.go.kr/ncis/
National Emergency Management Agency-Korea dangerous material inventory management system; http://www.nema.go.kr/hazmat/main/main.jsp
REACH information on registered substances; http://apps.echa.europa.eu/registered/registered-sub.aspx (Color) , (Odor) , (Melting point/freezing point) , (Oral) , (Dermal) , (Inhalation) , (Skin corrosion/ irritation) , (Serious eye damage/ irritation) , (Skin sensitization) , (Carcinogenicity) , (Mutagenicity) , (Reproductive toxicity) , (Specific target organ toxicity (single exposure)) , (Specific target organ toxicity (repeat exposure))
Waste Control Act enforcement regulation attached [1]
American Conference of Governmental Industrial Hygienists TLVs and BEIs.
EU CLP; http://esis.jrc.ec.europa.eu/index.php?PGM=cla
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; http://monographs.iarc.fr
Korea Occupational Health & Safety Agency; http://www.kosha.net
NIOSH Pocket Guide; http://www.cdc.gov/niosh/npg/npgdcas.html
National Chemicals Information System; http://ncis.nier.go.kr/ncis/
National Emergency Management Agency-Korea dangerous material inventory management system; http://www.nema.go.kr/hazmat/main/main.jsp
National Toxicology Program; http://ntp-apps.niehs.nih.gov/ntp_tox/index.cfm
TOMES-LOLI®; http://www.rightanswerknowledge.com/loginRA.asp
The Chemical Database -The Department of Chemistry at the University of Akron; http://ull.chemistry.uakron.edu/erd/ (Description) , (Color) , (Odor) , (Melting point/freezing point) , (Solubility (ies)) , (Specific gravity) , (Molecular weight)
The Chemical Database -The Department of Chemistry at the University of Akron; http://ull.chemistry.uakron.edu/erd/ (Skin corrosion/ irritation) , (Serious eye damage/ irritation)
Waste Control Act enforcement regulation attached [1]
American Conference of Governmental Industrial Hygienists TLVs and BEIs.
EU CLP; http://esis.jrc.ec.europa.eu/index.php?PGM=cla
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; http://monographs.iarc.fr
Korea Occupational Health & Safety Agency; http://www.kosha.net

Momentive Performance materials MSDS (Initial boiling point and boiling range) , (Vapor pressure) , (Solubility (ies)) , (Vapor density)
Momentive Performance materials MSDS (Odor) , (Oral) , (Dermal) , (Inhalation) , (Skin corrosion/ irritation) , (Serious eye damage/ irritation) , (Skin sensitization) , (Mutagenicity)
NIOSH Pocket Guide; http://www.cdc.gov/niosh/npg/npgdcas.html
National Chemicals Information System; http://ncis.nier.go.kr/ncis/
National Emergency Management Agency-Korea dangerous material inventory management system; http://www.nema.go.kr/hazmat/main/main.jsp
National Toxicology Program; http://ntp-apps.niehs.nih.gov/ntp_tox/index.cfm
TOMES-LOLI®; http://www.rightanswerknowledge.com/loginRA.asp
The Chemical Database -The Department of Chemistry at the University of Akron; http://ull.chemistry.uakron.edu/erd/ (Description) , (Color) , (Melting point/freezing point) , (Flash point) , (Specific gravity) , (Auto ignition temperature) , (Decomposition temperature)
Waste Control Act enforcement regulation attached [1]
DOW CORNING MSDS (Description) , (Color) , (Initial boiling point and boiling range) , (Flash point) , (Flammability (solid, gas)) , (Specific gravity) , (Viscosity) , (Skin corrosion/ irritation) , (Serious eye damage/ irritation) , (Specific target organ toxicity (single exposure)) , (Specific target organ toxicity (repeat exposure)) , (Persistence) , (Degradability) , (Bioaccumulation) , (Other hazardous effect)
Emergency Response Guidebook 2008; http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/erg2008_eng.pdf
Korea Occupational Health & Safety Agency; http://www.kosha.net
National Chemicals Information System; http://ncis.nier.go.kr/ncis/
National Emergency Management Agency-Korea dangerous material inventory management system; http://www.nema.go.kr/hazmat/main/main.jsp
UN Recommendations on the transport of dangerous goods 17th
Waste Control Act enforcement regulation attached [1]
American Conference of Governmental Industrial Hygienists TLVs and BEIs.
EPISUITE v4.1; http://www.epa.gov/opt/exposure/pubs/episuitedl.htm (Mobility in soil)
EU CLP; http://esis.jrc.ec.europa.eu/index.php?PGM=cla
Emergency Response Guidebook 2008; http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/erg2008_eng.pdf
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; http://monographs.iarc.fr
International Uniform Chemical Information Database(IUCLID); http://esis.jrc.ec.europa.eu/ (crustacean) , (Persistence)
Korea Occupational Health & Safety Agency; http://www.kosha.net
NIOSH Pocket Guide; http://www.cdc.gov/niosh/npg/npgdcas.html
National Chemicals Information System; http://ncis.nier.go.kr/ncis/
National Emergency Management Agency-Korea dangerous material inventory management system; http://www.nema.go.kr/hazmat/main/main.jsp
National Toxicology Program; http://ntp-apps.niehs.nih.gov/ntp_tox/index.cfm
OECD SIDS; http://webnet.oecd.org/hpv/ui/Search.aspx (Fish)
REACH information on registered substances; http://apps.echa.europa.eu/registered/registered-sub.aspx (Upper/lower flammability or explosive limits) , (Vapor pressure) , (Specific gravity) , (Auto ignition temperature) , (Oral) , (Dermal) , (Inhalation) , (Skin corrosion/ irritation) , (Serious eye damage/ irritation) , (Skin sensitization) , (Carcinogenicity) , (Mutagenicity) , (Reproductive toxicity) , (Specific target organ toxicity (single exposure)) , (Specific target organ toxicity (repeat exposure)) , (Bioaccumulation) , (Biodegradation)
SAMSUNG Total Co., Ltd. MSDS (Description) , (Color) , (Odor) , (Initial boiling point and boiling range) , (Flash point) , (Solubility (ies)) , (Viscosity) , (Incompatible materials)
TOMES-LOLI®; http://www.rightanswerknowledge.com/loginRA.asp
UN Recommendations on the transport of dangerous goods 17th
Waste Control Act enforcement regulation attached [1]
Evonik Degussa MSDS (Description) , (Color) , (Odor) , (Flash point) , (Solubility (ies)) , (Specific gravity) , (Viscosity) , (Oral) , (Inhalation) , (Skin corrosion/ irritation) , (Serious eye damage/ irritation) , (Skin sensitization) , (Mutagenicity) , (Disposal precaution)
EVONIC INDUSTRIES MSDS (Description) , (Color) , (Odor) , (pH) , (Flash point) , (Solubility (ies)) , (Specific gravity) , (Viscosity) , (Mutagenicity) , (Other hazardous effect)
EVONIK INDUSTRIES MDSD (Skin sensitization)

EVONIK INDUSTRIES MSDS (Oral) , (Skin corrosion/ irritation) , (Serious eye damage/ irritation)
AKRON; http://ull.chemistry.uakron.edu/erd (Description) , (Color) , (Melting point/freezing point) , (Initial boiling point and boiling range) , (Vapor pressure) , (Vapor density) , (Specific gravity) , (Viscosity) , (Molecular weight)
American Conference of Governmental Industrial Hygienists TLVs and BEIs.
EU CLP; http://esis.jrc.ec.europa.eu/index.php?PGM=cla
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; http://monographs.iarc.fr
Korea Occupational Health & Safety Agency; http://www.kosha.net
NIOSH Pocket Guide; http://www.cdc.gov/niosh/npg/npgdcas.html
National Chemicals Information System; http://ncis.nier.go.kr/ncis/
National Emergency Management Agency-Korea dangerous material inventory management system; http://www.nema.go.kr/hazmat/main/main.jsp
National Toxicology Program; http://ntp-apps.niehs.nih.gov/ntp_tox/index.cfm
TOMES-LOLI®; http://www.rightanswerknowledge.com/loginRA.asp
Waste Control Act enforcement regulation attached [1]

B. Issuing date Aug 23, 2013

C. Revision number and date

revision number 1

date of the latest revision 2014.07.16

D. Others

•Revised Material Safety Data Sheet based on the amendments made on the Ministry of Employment and Labor Public Notice on Standard for Classification Labeling of Chemical Substance and Material Safety Data Sheet.
•This MSDS is authored in pursuant to the Article 41 of the Occupational Safety and Health Act.
•The content is based on the latest information and knowledge that we currently possess.
•This MSDS was authored to aid buyer, processor or any other third person who handles the chemical of subject in the MSDS; additionally, it does not warrant suitability of the chemical for special purposes or the commercial use of statements that approves the use of it in combination with other chemicals as well as technical or legal liabilities.