

Material Safety Data Sheet

Product	Kixx Geartec GL-5 80W-90		
List No.	Issuing date	Last revised date	Department
LB2660	2012-11-30	2019-12-09	Finished Lubricants R&D Team

1. Identification of the substance/mixture and of the company/undertaking

1) Product identifier

- Kixx Geartec GL-5 80W-90

2) Relevant identified uses of the substance or mixture and uses advised against

- Relevant identified uses : (Lubricants and additives)
- Uses advised against : Do not use for any other purpose.

3) Supplier information

Manufacturer information

- Company name : GS Caltex Corporation
[Manufacture]
- Address : GS Tower, 508, Nonhyeon-ro, Gangnam-gu, Seoul, Korea
- Emergency telephone number : 1899-5145
- Fax :

2. HAZARD IDENTIFICATION

1) Hazard classification

- Not applicable

2) Allocation label elements

Hazard pictograms

- Not applicable

Signal word

- Not applicable

Hazard statements

- Not applicable

Precautionary statements

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

3) Other hazards

○ Product NFPA Level : Health , Flammability , Reactivity

(※ 0-Lack, 1-Low, 2-Moderate, 3-High, 4-Very High)

※ Chemical NFPA Level.

- Distillates (petroleum), hydrotreated heavy paraffinic : Health=1, Flammable=1, Reaction=0
- Polyisobutylene : Health=1, Flammable=1, Reaction=0
- Business Secret1 : Health=0, Flammable=0, Reaction=0
- Dipentyl hydrogen phosphate : Health=0, Flammable=0, Reaction=0
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Health=1, Flammable=0, Reaction=0
- tert-Alkyl(C=12-14) amines : Health=1, Flammable=0, Reaction=0

3. Composition/Information on ingredients

Chemical name	Trade names and Synonyms	CAS No.	EC No.	Contain Ratio(%)
Distillates (petroleum), hydrotreated heavy paraffinic		64742-54-7	265-157-1	80 ~ 90
Polyisobutylene		9003-27-4		5 ~ 15
Business Secret1				2 ~ 5
Dipentyl hydrogen phosphate		3138-42-9	221-537-9	0.1 ~ 0.5
2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole		89347-09-1	289-493-3	0.01 ~ 0.2
tert-Alkyl(C=12-14) amines		68955-53-3	273-279-1	0.1 ~ 0.5

4. FIRST AID MEASURES

1) Following eye contact

- In case of contact with material, immediately flush eyes with running water for at least 15 minutes.
- Get medical aid immediately.

2) Following skin contact

- In case of contact with material, immediately flush skin with running water for at least 15 minutes.
- Remove and isolate contaminated clothing and shoes.
- Launder contaminated clothing and shoes before re-use.
- Get medical aid immediately.

3) Following inhalation

- Move to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Seek immediate medical assistance.

4) Following ingestion

- If unconscious but breathing, never give anything by mouth.
- Get medical aid immediately.

5) Advice to physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Do not apply drugs of the adrenaline ephedrine group.

5. FIRE FIGHTING MEASURES

1) Suitable (and unsuitable) extinguishing media

○ Suitable extinguishing media

- Small fire: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO₂ (Suitable extinguishing media).
- Large fire: Water spray/fog, regular foam (Suitable extinguishing media).

○ Unsuitable extinguishing media

- High-pressure water (Unsuitable extinguishing media).

2) Special hazards arising from the substance or mixture

- May ignited from heat, friction or contamination.
- Containers may explode when heated.
- Fire may produce irritating and/or toxic gases.
- May cause toxic effects if inhaled.
- Some liquids produce vapors that may cause dizziness or suffocation.
- May ignited from heat, friction or contamination.
- Containers may explode when heated.
- Some may burn but none ignite readily.
- Fire may produce irritating and/or toxic gases.
- May cause toxic effects if inhaled.
- Some liquids produce vapors that may cause dizziness or suffocation.

3) Special protective equipment for firefighters

- Substance may be transported hot.
- Runoff may cause pollution.
- Contact may cause burns to skin and eyes.
- Dike fire-control water for later disposal; do not scatter the material.
- 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.

6. ACCIDENTAL RELEASE MEASURES

1) Health considerations and protective equipment

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Stop leak if you can do it without risk.
- Please note that materials and conditions to be avoided.
- Ventilate the contaminated area.
- Do not touch or walk through spilled material.
- Prevent dust cloud.

- Do not enter areas which have more than 23.5% oxygen in the atmosphere, without respirator or air supplied mask.

2) Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

3) For cleaning up

- Small Spill: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
- Large Spill: Dike far ahead of liquid spill for later disposal.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.
- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

7. HANDLING AND STORAGE

1) Precautions for safe handling

- Please note that materials and conditions to be avoided.
- Wash ... thoroughly after handling.
- Handling refer to engineering control/personal protection section.
- CAUTION: High temperature.
- CAUTION: This material does not contain oxygen and may cause asphyxia if released in a confined area.
- High concentration of this gas will create an oxygen-deficient atmosphere, creating the risk of asphyxiation. Check oxygen content before entering area.
- Use adequate machine for prevention when package handling.
- Avoid any skin and eye contact when insert undiluted solution. Wash ... thoroughly after handling.
- Caution: Dangerous fire hazard when exposed to heat, or flame, sparks.
- Wear an appropriate Personal protection. (See Exposure Controls/Personal Protection section.)

2) Conditions for safe storage (including any incompatibilities)

- Store in a dry place. Store in a closed container.
- Please note that materials and conditions to be avoided.
- Store in a cool/low-temperature, well-ventilated {dry} place {away from heat and ignition sources}
- Choose a place that can be protected from strong oxidizers and acid.
- Drum Handling: Must work at safe place., Loading more than 3 stack is prohibited.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1) Chemical exposure limits, Biological exposure standard

○ Occupational exposure limits (Domestic)

- Distillates (petroleum), hydrotreated heavy paraffinic : TWA Not applicable, STEL Not applicable
- Polyisobutylene : TWA Not applicable, STEL Not applicable
- Business Secret1 : TWA Not applicable, STEL Not applicable
- Dipentyl hydrogen phosphate : TWA Not applicable, STEL Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : TWA Not applicable, STEL Not applicable
- tert-Alkyl(C=12-14) amines : TWA Not applicable, STEL Not applicable

○ Occupational exposure limits (ACGIH)

- Distillates (petroleum), hydrotreated heavy paraffinic : TWA Not applicable, STEL Not applicable
- Polyisobutylene : TWA Not applicable, STEL Not applicable

- Business Secret2 : TWA Not applicable, STEL Not applicable
- Dipentyl hydrogen phosphate : TWA Not applicable, STEL Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : TWA Not applicable, STEL Not applicable
- tert-Alkyl(C=12-14) amines : TWA Not applicable, STEL Not applicable

○ Biological limit values

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Polyisobutylene : Not applicable
- Business Secret3 : Not applicable
- Dipentyl hydrogen phosphate : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable

2) Appropriate engineering controls

- Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

3) Personal protection equipment

○ Respiratory protection

- If high frequency of use or exposure, wear air respirator.
- Wear breathing protection, which needs a confirmation from the Korea Occupational Safety and Health Agency.

○ Eye protection

- Wear suitable protective goggles and face shields.
- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

○ Hand protection

- Wear insulated gloves.
- Wear Non-moisture permeable chemical resistance protective gloves(latex, nitrile rubber, PVC) for prevent skin contact.

○ Body protection

- Wear suitable protective clothing.
- When contact is likely wear chemical resistant, oil and grease resistant, non-moisture permeable shoes and clothes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Item	Input Value
Apperance	Liquid (Clear, Brown)
Smell	a specific smell of Hydrocarbon
Smell Threshold	No Data
pH	No Data
Melting/Freezing Poing	No Data
Boilling Point	300~500 °C
Flash Point	230 °C
Evaporating Rate	No Data
Flammability	No Data

Explosibility Range	No Data
Steam Pressure	<0.1 kPa (at 20°C)
Solubility	No Data
Vapor Density	No Data
Specific Gravity	0.88
Distribution Coefficient	No Data
Self-Ignition Temperature	No Data
Pyrolysis Temperature	No Data
Viscosity	15.0 mm ² /s (at 100°C)
Molecular Weight	No Data

10. STABILITY AND REACTIVITY

1) Stability and hazardous reactivity

- Stable under normal temperatures and pressures.
- Containers may explode when heated.
- Fire may produce irritating and/or toxic gases.
- May cause toxic effects if inhaled.
- Some liquids produce vapors that may cause dizziness or suffocation.

2) Conditions to avoid

- Ignition source(heat, spark, flame, etc.).

3) Incompatible materials

- Combustibles.
- Irritating and/or toxic gas.

4) Hazardous decomposition products

- Not available

11. TOXICOLOGICAL INFORMATION

1) Exposure route information

Inhalation

- Can be absorbed in body by inhalation.

Skin Contact

- Can be absorbed in by contact skin and the digestive organs or inhalation of aerosol.

Eye Contact

- Gases can be exposed through the respiratory tract, eyes and skin.
- Liquids can be exposed through the eyes, skin and oral.
- Vapors/mist can be exposed through the respiratory tract, eyes and skin.

Ingestion

- Can be absorbed in body by inhalation and contact the digestive organs.

2) Health hazard information

Acute toxicity

*** Oral - PRODUCT : Not applicable (ATEMix = 0)**

- Distillates (petroleum), hydrotreated heavy paraffinic : rat(male/female), LD50 > 5,000 mg/kg bw, no deaths (read-across: 64742-56-9) (OECD TG 401, GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : LD50 > 5,000 mg/kg Rat

*** Dermal - PRODUCT : Not applicable (ATEMix = 0)**

- Distillates (petroleum), hydrotreated heavy paraffinic : rabbit(male/female), LD50 > 5,000 mg/kg bw, no deaths (read-across: 64742-56-9) (OECD TG 402, GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : LD50 > 5,000 mg/kg Rat

*** Inhalation(Gas) - PRODUCT : No data (ATEMix = 0)**

- Distillates (petroleum), hydrotreated heavy paraffinic : No data
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

*** Inhalation(Vapour) - PRODUCT : Not applicable (ATEMix = 0)**

- Distillates (petroleum), hydrotreated heavy paraffinic : rat(male/female), LC50 > 5.53 mg/L air /4h No deaths (read-across: MRD-87-102) (OECD TG 403)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : LC50 >= 157 ppm (rat; male/female; OECD Guideline 403; 2001)

*** Inhalation(Dust, mist) - PRODUCT : No data (ATEMix = 0)**

- Distillates (petroleum), hydrotreated heavy paraffinic : No data
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

○ Skin corrosion/Irritation

- Distillates (petroleum), hydrotreated heavy paraffinic : Solvent dewaxed light paraffinic oil is not considered to be irritating to the skin of rabbits. (read across : 64742-56-9) (GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : corrosive(rabbit; 49CFR, Section 173.240(a)(2); 1984)

○ Serious eye damage/irritation

- Distillates (petroleum), hydrotreated heavy paraffinic : Solvent dewaxed light paraffinic oil is not considered to be an ocular irritant. (read-across: 64742-56-9) (OECD TG 405, GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : highly irritating(rabbit; in vivo; 1986)

○ Respiratory sensitization

- Distillates (petroleum), hydrotreated heavy paraffinic : No data
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

○ Skin sensitization

- Distillates (petroleum), hydrotreated heavy paraffinic : Under the conditions of the test, Solvent dewaxed light paraffinic oil is considered non-sensitizing. (read-across: 64742-56-9) (OECD TG 406, GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : sensitising(guinea pig; Modified Buehler; 1985)

○ Carcinogenicity

- Distillates (petroleum), hydrotreated heavy paraffinic : Carcinogenicity Category 1B EU CLP Notice
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

○ Germ cell mutagenicity

- Distillates (petroleum), hydrotreated heavy paraffinic : In vitro(CHO cell) Chromosome Aberration Test: negative (read-across : 64742-53-6) (OECD TG 473, GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : negative (in vitro CHO/HGPRT; OECD Guideline 476; 2010)

○ Reproductive toxicity

- Distillates (petroleum), hydrotreated heavy paraffinic : Reproductive performance was not adversely affected at any dose level evaluated. There were no neonatal toxicity observed at any dose level. There were no differences in terms of systemic toxicity bet
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : On the basis of these data, the maternal no-observable-adverse-effect-level (NOAEL) of Primene 81-R is 5 mg/kg/day. Adverse clinical observations, skin reactions and reductions in body weights and fee

○ Specific target organ toxicity (single exposure)

- Distillates (petroleum), hydrotreated heavy paraffinic : Hydronephrosis of the right kidney was observed in one rat but was not considered treatment-related by the study authors. No other abnormalities were observed in any male or female rats. (read-across:
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

○ Specific target organ toxicity (repeated exposure)

- Distillates (petroleum), hydrotreated heavy paraffinic : The systemic toxicity NOAEL for this 28-day dermal toxicity study in the rabbit is 1,000 mg/kg, based on the lack of adverse systemic effects observed at this dose level. (read-across : 64742-53-6) (OE
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : Inhalation exposure of Primene 81-R Amine produced 100% mortality at 537 mg/m³. Prior to the death, these animals exhibited labored breathing, respiratory noise, gasping, unstable gait, tremors, saliv

○ Aspiration hazard

- Distillates (petroleum), hydrotreated heavy paraffinic : 73.9 mm²/s (40°C)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

12. ECOLOGICAL INFORMATION

1) Aquatic toxicity

○ Fish

- Distillates (petroleum), hydrotreated heavy paraffinic : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP)
- Polyisobutylene : LC50 > 5600 mg/L Fish(Oncorhynchus mykiss)
- Dipentyl hydrogen phosphate : LC50=14.128 mg/l (96h)
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : LC50 > 100 mg/L Fish(Pimephales promelas)
- tert-Alkyl(C=12-14) amines : LC50=1.3 mg/L (Oncorhynchus mykiss; 96hr; OECD Guideline 203; 1994)

○ Crustacean

- Distillates (petroleum), hydrotreated heavy paraffinic : 48h-EL50(Daphnia magna) > 10,000 mg/L(read across : 64742-53-6 or 64741-97-5) (OECD TG 202)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : LC50=9.021 mg/l (48h)
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : EC50(Daphnia magna) > 1 mg/l(48h) (OECD 202)
- tert-Alkyl(C=12-14) amines : EC50>= 0.24 - <= 6 mg/L(Daphnia magna; 48 h; EPA 56016-82-002; 1984)

○ Aquatic algae

- Distillates (petroleum), hydrotreated heavy paraffinic : NOEC >= 100 mg/L Aquatic algae(Pseudokirchnerella subcapitata)
- Polyisobutylene : No data

- Dipentyl hydrogen phosphate : EC50=10.917 ml/l (96h)
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : EC50(Pseudokirchnerella subcapitata) > 1 mg/l(72h) (OECD 201)
- tert-Alkyl(C=12-14) amines : EC50=0.44 mg/L(Pseudokirchnerella subcapitata; 72h; OECD Guideline 201; 1994)

2) Persistence and degradation

○ Persistence

- Distillates (petroleum), hydrotreated heavy paraffinic : This substance is UVCB, so not applicable.
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : log kow=3.271
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Log Kow= 1.72 - 2.94
- tert-Alkyl(C=12-14) amines : Log Pow = 2.9 (Method: other (measured): 40CFR Part 792, 23 °C, pH 7, 1994)

○ Degradation

- Distillates (petroleum), hydrotreated heavy paraffinic : No data
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : ca. 22% (28 d; OECD Guideline 301 D; 1994)

○ biodegradation

- Distillates (petroleum), hydrotreated heavy paraffinic : 31% degradation after 28 days (OECD TG 301F) (read across: Solvent Neutral 600 Base Oil (MRD-94-981)) (OECD TG 301F, GLP)
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

3) Bioaccumulative potential

- Distillates (petroleum), hydrotreated heavy paraffinic : This substance is UVCB, so not applicable.
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : BCF=10
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : BCF=15.71
- tert-Alkyl(C=12-14) amines : No data

4) Mobility in soil

- Distillates (petroleum), hydrotreated heavy paraffinic : No data
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : Koc=657.9
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Koc=3.993e+006
- tert-Alkyl(C=12-14) amines : No data

5) Hazard to the ozone layer

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Polyisobutylene : Not applicable
- Dipentyl hydrogen phosphate : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable

6) Other adverse effects

- Distillates (petroleum), hydrotreated heavy paraffinic : No data
- Polyisobutylene : No data
- Dipentyl hydrogen phosphate : No data
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : No data
- tert-Alkyl(C=12-14) amines : No data

13. DISPOSAL CONSIDERATIONS

1) Disposal methods

- Isolate water and oil: Burn in isolated oil, disposed of water in water pollution control plant.
- Disposed by evaporation or concentration. Incinerated or stabilized the residues.
- Disposed by aggregation and precipitation. Incinerate the residues.
- Purified by isolation, distillation, extraction, filtration and thermal decomposition.
- Disposed by incineration or stabilization.

2) Precautions (including disposal of contaminated container of package)

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

1) UN No.

- Not applicable

2) Proper shipping name

- Not applicable

3) Class or division

- Not applicable

4) Packing group

- Not applicable

5) Marine pollutant

- Not applicable

6) Special safety response for transportation or transportation measure

- Types of Emergency Measures in Case of Fire : Not applicable
- Types of Emergency Measures in Leakage : Not applicable
- This product is not regulated for carriage according to ADR/RID, ADN, IMDG, ICAO/IATA.

15. REGULATORY INFORMATION

1) Occupational Safety and Health Act in Korea - PRODUCT :

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Hazardous Substances(Substances Subject to Process Safety Reporting)
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

2) Toxic Chemical Control Act in Korea - PRODUCT :

- Polyisobutylene : Existing Commercial Chemical Substances
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Existing Commercial Chemical Substances
- tert-Alkyl(C=12-14) amines : Existing Commercial Chemical Substances
- Distillates (petroleum), hydrotreated heavy paraffinic : Existing Commercial Chemical Substances
- Dipentyl hydrogen phosphate : Existing Commercial Chemical Substances
- Business Secret : No data

3) Safety Control of Dangerous Substances Act in Korea - PRODUCT : 제 4류 제4석유류

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

4) Wastes Control Act in Korea - PRODUCT : 지정 폐기물

- 폐유(액체상태)

5) Other regulations in KOREA and Abroad regulations

○ U.S.A. management information(OSHA regulation)

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

○ U.S.A. management information(CERCLA regulation)

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

○ U.S.A. management information(EPCRA 302 regulation)

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Dipentyl hydrogen phosphate : Not applicable

- Business Secret : No data

○ **U.S.A. management information(EPCRA 304 regulation)**

- Polyisobutylene : Not applicable

- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Dipentyl hydrogen phosphate : Not applicable

- Business Secret : No data

○ **U.S.A. management information(EPCRA 313 regulation)**

- Polyisobutylene : Not applicable

- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Dipentyl hydrogen phosphate : Not applicable

- Business Secret : Not applicable

○ **U.S.A. management information(Rotterdam Convention on Substances)**

- Polyisobutylene : Not applicable

- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Dipentyl hydrogen phosphate : Not applicable

- Business Secret : Not applicable

○ **U.S.A. management information(Stockholm Convention on Substances)**

- Polyisobutylene : Not applicable

- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Dipentyl hydrogen phosphate : Not applicable

- Business Secret : Not applicable

○ **U.S.A. management information(Mont- real Protocol on Substances)**

- Polyisobutylene : Not applicable

- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Dipentyl hydrogen phosphate : Not applicable

- Business Secret : Not applicable

○ **EU Classification (CLASSIFICATION)**

- Polyisobutylene : Not applicable

- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable

- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : Carc. 1B
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

○ EU Classification (Risk Phrases)

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : H350
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

○ EU Classification (Safety Phrases)

- Polyisobutylene : Not applicable
- 2,5-Bis(tert-nonyldithio)-1,3,4-thiadiazole : Not applicable
- tert-Alkyl(C=12-14) amines : Not applicable
- Distillates (petroleum), hydrotreated heavy paraffinic : S:53-45
- Dipentyl hydrogen phosphate : Not applicable
- Business Secret : No data

16. OTHER INFORMATION

1) Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

2) Print date

- 2012-11-30

3) Revision date

- Number of revised
 - 3
- Date of last revision
 - 2019-12-09
- Last Revision History
 - 최신 법령 및 실험 Data update하여 재검토함

4) Other

- 이 정보는 근로자 건강, 환경, 안전을 보호하고자, 현재 가용할 수 있는 DB를 근거로 하여 작성하였음.