Material Safety Data Sheet
(MSDS)

Product	Kixx ATF DX-VI

Team	Date of first preparation	Date of last revision	Revision Number
Finished Lubricants R&D Team	2016-07-01	2017-10-26	1

1. Chemical Product and Company Information

1) Product : Kixx ATF DX-VI

2) Recommended use of the chemical and restrictions on use
- ○ Recommended use : Lubricants, Automotive Transmission Fluid
- ○ Restrictions on use : No data

3) Manufacture/Supplier information
- ○ Supply company : GS Caltex Corporation
- ○ Address : Nonhyeon-ro 508(Yeoksam-dong), Gangnam-gu, Seoul, South Korea
- ○ Information service or emergency call : 82-2-1899-5145
- ○ Department in charge : Finished Lubricants R&D Team

2.Hazards Identification

1) Classification of the substance or mixture
- Not hazardous

2) GHS labels, including precautionary statements
- ○ Symbol : No symbol
- ○ Signal word : No signal word
- ○ Hazard statement

  Not classified under GHS criteria
- ○ Precautionary statement
  - Prevention

    No precautionary phrases
  - Response

    No precautionary phrases
  - Storage

    No precautionary phrases
  - Disposal

    No precautionary phrases

3) Other hazards which do not result in classification

Component \ NFPA	Health	Fire	Reactivity
1. Distillates, Hydrotreated Heavy Paraffinic	1	1	0
2. Additive mixture	0	1	0

3. Composition and Information on Ingredients

Component	Synonyms	CAS No.	Content(%)
1. Distillates, Hydrotreated Heavy Paraffinic	Hydrotreated (severe) heavy paraffinic distillate	64742-54-7	85 ~ 95
2. Additive mixture	Not Applicable	Not Determined	8 ~ 15

4. First Aid Measures

1) Eye contact :
- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15minutes and call a doctor/physician.

2) Skin contact :
- Flush skin with plenty of wter for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

3) Inhalation :
- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.
- Take the doctor's examination.

4) Ingestion :
- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.

5) Most important symptoms/effects, acute and delayed :
- May cause slight eye and skin irritation. Not expected to be a sensitizer.

6) First-aid treatment and information on medical doctors :
- Treat symptomatically.
  Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

1) Recommanded(or prohibited) extinguishing media
   - Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
   - Avoid use of water jet for extinguishing

2) Specific hazard from chemical material
   - Not available

3) Special protective actions for firefighters
   - Notify your local firestation and inform the location of the fire and characteristics hazard.
   - Avoid inhalation of materials or combustion by-products.
   - Do not access if the tank on fire.
   - Use appropriate extinguishing measure suitable for surrounding fire.
   - Wear appropriate protective equipment.
   - Keep containers cool with water spray.
   - Vapor or gas is burned at distant ignition sources can be spread quickly.

6. Accidental Release Measures

1) Personal precautions, protective equipment and emergency procedures
   - Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
   - Must work against the wind, let the upwind people to evacuate.
   - Move container to safe area from the leak area.
   - Do not direct water at spill or source of leak.

2) Environmental precautions
   - Prevent runoff and contact with waterways, drains or sewers.
   - If large amounts have been spilled, inform the relevant authorities.

3) Purification and removal methods
   - Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
   - Notification to central government, local government. When emissions at least of the standard amount
   - Dispose of waste in accordance with local regulation.
   - Appropriate container for disposal of spilled material collected.
   - Small leak: sand or other non-combustible material, please let use absorption.
   - Wipe off the solvent.
   - Dike for later disposal.

7. Handling and Stroage

1) Safety handling :
   Avoid contact with skin. Use proper bonding and/or grounding procedures.
   Prevent small spills and leakage to avoid slip hazard.
   Material can accumulate static charges which may cause an electrical spark (ignition source).

2) Stroage :

Stroage in closed containers.
Stroage in cool and dry areas.
Ventilation keeps it in a region
Keep away from prohibited materials for mixing.

8. Exposure Control and Personal Protection

A. Exposure limits and biological exposure limits of chemical

1) Distillates, Hydrotreated Heavy Paraffinic
- ○ ACGIH : TWA : 5mg/m3
  STEL : 10mg/m3
- ○ NIOSH : TWA : 5mg/m3
  STEL : 10mg/m3
- ○ Biological exposure limits : No data

2) Additive mixture
- ○ ACGIH : TWA : No data
  STEL : No data
- ○ NIOSH : TWA : No data
  STEL : No data
- ○ Biological exposure limits : No data

B. Engineering management :

Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.
Install local ventilation system.
Comply with limits.

C. Personal protection equipment :
- ○ Respiratory protection :
  If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Half-face filter respirator
- ○ Eyes protection :
  Safety glasses or goggles are recommended for the eyes protection from dusts or mists. A business proprietor should install eyes washing facilities near working areas to protect worker's eyes for emergency.
- ○ Hands protection :
  Use proper chemical resistant gloves.
- ○ Human body protection :
  Use proper chemical resistant clothes.

9. Physical and Chemical Properties

1) Appearance : Clear, Red

2) Odor : a specific smell of Hydrocarbon

3) Odor threshold : No data

4) pH : No data

5) Melting point/freezing point : No data

6) Initial boiling point or boiling range : 250~500℃

7) Flash point : 224℃ (C.O.C)

8) Evaporation rate (BuAc=1) : No data

9) Flammability(solid, gas) : No data

10) Upper/lower flammability or explosive limits : No data

11) Vapor pressure : No data

12) Solubility : No data

13) Vapor density : No data

14) Relative density : 0.8444

15) Partition coeficient: n-octano/water : No data

16) Auto-ignition temperature : No data

17) Decomposition temperature : No data

18) Viscosity : 5.97 cSt(100℃)

19) Molecular weight : No data

10. Stability and Reactivity

1) Chemical stability :
   - Stable at room temperature and pressure.

2) Toxicant generation possibility during reaction :
   - Hazardous Polymerization will not occur

3) Prohibited conditions :
   - Avoid heat, sparks, open flames and other ignition sources

4) Prohibited materials :
   - An Oxidizing agent

5) Toxicant during decomposition :
   - May emit flammable vapour if involved in fire.

11. Toxicological Information

A. Information on the likely routes of exposure

○ Inhalation : May cause slight irritation
○ Ingestion : May cause vomit, coughing, shortness of breath, dizziness.
○ Skin contact : May cause slight skin irritation.
○ Eye contact : May cause slight eye irritation.

B. Delayed and immediate effects and chronic effectsfrom short or long term exposure

1) Distillates, Hydrotreated Heavy Paraffinic
○ Acute toxicity
- Oral : LD50 > 15000mg/bw Rat
- Dermal : LD50 > 5000mg/bw Rabbit
- Inhalation : LC50 = 2.18mg/L (4hr) Rat
○ Skin corrosion/irritation : May cause slight skin irritation
○ Serious eye damage/eye irritation : No irritating (Rabbit)
○ Respiratory sensitization : Not determined (guinea pig)
○ Skin sensitization : Not determined (guinea pig)
○ Carcinogenicity : MOL, OSHA, IARC : No data
○ Germ cell mutagenicity : Negative (Ames test)
○ Reproductive toxicity : No data
○ Specific target organ systemic toxicity(single exposure) : No data
○ Specific target organ systemic toxicity(repeated exposure) : No data
○ Aspiration hazard : No data

2) Additive mixture
○ Acute toxicity
- Oral : No data
- Dermal : No data
- Inhalation : No data
○ Skin corrosion/irritation : No data
○ Serious eye damage/eye irritation : No data
○ Respiratory sensitization : No data
○ Skin sensitization : No data
○ Carcinogenicity : No data
○ Germ cell mutagenicity : No data
○ Reproductive toxicity : No data
○ Specific target organ systemic toxicity(single exposure) : No data
○ Specific target organ systemic toxicity(repeated exposure) : No data
○ Aspiration hazard : No data

C. Numerical measures of toxicity(such as ATE) : No data

12. Ecological Information

A. Hazardous to the aquatic environment :

1) Distillates, Hydrotreated Heavy Paraffinic

: May cause long lasting harmful effects to aquatic life

○ Fish : No data

○ Crustacea : No data

○ Algea : No data

2) Additive mixture

: May cause long lasting harmful effects to aquatic life

○ Fish : No data

○ Crustacea : No data

○ Algea : No data

B. Persistence and degradability :

: Expected to be biodegradable

1) Distillates, Hydrotreated Heavy Paraffinic

- No data

2) Additive mixture

- No data

C. Bioaccumulative potential

1) Distillates, Hydrotreated Heavy Paraffinic

- Bioaccumulation : 6% (28 day, aerotropism, domestic waste water, not disassemble)

2) Additive mixture

- No data

D. Mobility in soil :

- Expected to have mobility in soils.

E. Other adverse effects :

- No data

13. Disposal Considerations

1) Disposal methods :

Use only licensed transporters and permitted facilities for waste disposal.

2) Disposal cautions :

Dispose according to the related regulations

14. Transport Information

This product is not regulated for carriage according to ADR/RID, ADN, IMDG, ICAO/IATA.

1) UN number : Not applicable

2) UN Proper Shipping Name : Not applicable

3) Transport hazard classes : Not applicable

4) Packing group, if applicable : Not applicable

5) Environmental hazards : Not applicable

6) Special precautions for user : Not applicable

15. Regulatory Information

A. Industrial safety and health act (Korea)
Occupation environment measurement material, Special health examination material, Threshold limit values material.

B. Chemical control act (Korea)
- Distillates, Hydrotreated Heavy Paraffinic : No data
- Additive mixture : No data

C. Dangerous Goods Safe Control Act (Korea)
Category 4 Dangerous Goods (Flammable Liquids), Grade 4 petroleum chemicals

D. Hazardous material safety act (Korea)
- Distillates, Hydrotreated Heavy Paraffinic : No data
- Additive mixture : No data

E. Other internal and foreign acts

1) Distillates, Hydrotreated Heavy Paraffinic
○ EU classification
- Classification : Not determined
- Risk Phrases : Not determined
- Safety Phrases : Not determined

○ U.S. acts
- OSHA (29CFR1910.119) : Not determined
- CERCLA 103 (40CFR302.4) : Not determined
- EPCRA 302 (40CFR355.30) : Not determined
- EPCRA 304 (40CFR355.40) : Not determined
- EPCRA 313 (40CFR372.65) : Not determined

2) Additive mixture
○ EU classification
- Classification : No data
- Risk Phrases : No data
- Safety Phrases : No data

○ U.S. acts
- OSHA (29CFR1910.119) : No data
- CERCLA 103 (40CFR302.4) : No data
- EPCRA 302 (40CFR355.30) : No data
- EPCRA 304 (40CFR355.40) : No data
- EPCRA 313 (40CFR372.65) : No data

F. Global Chemical Inventories
- All components comply with the following chemical inventory requirements : AICS(Australia), DSL(Canada), EINECS(European Union), ENCS(Japan), IECSC(China), KECI(Korea), TSCA(United States)

16. Other Information

1) References
- Korea Occupatonal Safety & Health Agency
- GS Caltex R&D Center
- MSDS of raw material from supplier
- KOSHANET
- Occupation safety and health acts of Korea
- Globally Harmonized System of classification and labeling of chemicals (GHS), First revised edition, United Nations
- EINECS(European Inventory of Existing Commercial Chemical Substances)
- ACGIH(American Conference of Governmental Safety and Health)
- IUCLID Dataset

2) Date of preparation of the first version of the MSDS : 2016.7.1

3) Revised frequency and Date of preparation of the latest version of the MSDS : 2017-10-26 (1)

4) Others :

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