

Doc.No.	KAI 1005-1007	MSDS <small>(by article 41 of the occupation safety and health acts)</small>	Issuing Date	2017.3.14.
Page	1/9		Revision Number	6

1. Product and Supplier Identification

A. Product Name : Ethyl Acetate

B. Recommended Use and Restrictions on Use

- ☐ Recommended Use : Solvent(paints, resin, inks, adhesives), Organic synthesis, etc(detergent, synthetic leather)
- ☐ Restrictions on Use : **Restrict except for recommended use**

C. Manufacture/Supplier/Distributor Identification

- ☐ Company Name : Korea Alcohol Industrial Co.,LTD.
- ☐ Address : 14, Tapsil-ro 35beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, South Korea
- ☐ Information Service or Emergency Tel. : [Http:// www.ka.co.kr](http://www.ka.co.kr) / 02- 3440- 4100
- ☐ Division : Business Department

2. Hazards Identification

A. Classification :

- Flammable Liquid, Category 2 (**Flash Point < 23°C, Boiling point > 35°C**)
- Acute Toxicity Category 4 – Inhalation(Vapor) (**10 < Acute Toxicity Estimate ≤ 20 (mg/L)**)
- Specific Target Organ Toxicity(Single Exposure) – Category 1 (**May damage fertility, growth or sexula function**)
- Specific Target Organ Toxicity(Single Exposure) – Category 3 (**Narcotic effects**)

B. Warning

- ☐ Label



- ☐ Hazard Communication : DANGER!

- ☐ Label Elements

- H225 Highly flammable Liquid and Vapor
- H332 Acute toxicity when inhalation
- H336 May cause drowsiness or dizziness
- H370 May cause respiratory irritation.

- ☐ Terms for Precaution

– 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.

Doc.No.	KAI 1005-1007	MSDS (by article 41 of the occupation safety and health acts)	Issuing Date	2017.3.14.
Page	2/9		Revision Number	6

- P242 Use only non- sparking tools.
- P243 Take precautionary measures against static discharge.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P260 **Do not breathe vapor/spray**
- P264 Wash hands thoroughly after handling
- P270 Do not eat and have a smoke during using this product.
- P261 **Avoid inhalation vapor/spray**
- P271 Use only outdoors or in a well- ventilated area.

- Response

P303+P361+P353 If on skin(or hair) Take off immediately all contaminated clothing
Rinse skin with water/shower.

P370+P378 In case of fire, water spray/ alcohol resistant foam for extinction.

P308+P311 If exposed, Call a POISON CENTRE or doctor/physician

P321 If injected : take a first aid.

P304+P340 Move to the place in fresh air in case of Inhalation and take a rest by good posture to inhale.

P312 Call a POISON CENTRE or doctor/ physician if you feel unwell.

- Storage

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

P405 Store in a secure manner.

P403+P233 Store in a well- ventilated place and keep the container tightly closed.

Disposal

P501 Dispose of contents/ container by **incineration or recycle.**

C. Other

○ NFPA

- Health 1
- Flammability 3
- Reactivity 0

3. Composition

Chemical Name : Ethyl Acetate

Synonyms : Acetic Acid Ethyl Ester

CAS Number : 141- 78- 6

Content(%\$)

Name	Trade names and Synonyms	KE NO.	Content(%)
Ethyl Acetate	Acetic acid ethyl ester	KE-00047	99.8
Water	'Dihydrogen oxide : Oxidane	KE-35400	0.03
Other Organic Compound	-	-	0.17

Doc.No.	KAI 1005-1007	MSDS <small>(by article 41 of the occupation safety and health acts)</small>	Issuing Date	2017.3.14.
Page	3/9		Revision Number	6

4. First Aid Measures

A. Eye Contact

In case of eye contact, immediately flush eyes with plenty of clean running water for at least 15 minutes and obtain medical attention.

B. Skin Contact

In case of skin contact, remove contaminated clothing. In shower, wash affected areas with soap and water for at least 15 minutes. Seek medical attention immediately if skin contact. Wash clothing before reuse.

C. Inhalation

Remove to fresh air, restore or assist breathing if necessary. Obtain medical attention.

D. Ingestion

If swallowed, call 119 or physician immediately. If unconscious, do not induce vomiting and never give anything by mouth. Turn the head to the side for prevention of the airway to close.

In case of natural vomiting, keep the head lowing to avoid lung aspiration.

Obtain medical attention immediately.

E. Note to Physician

If swallowed, remove stomach contents by gastric suction or inject activated charcoal.

5. Fire Fighting Measure

A. Suitable(or Unsuitable) Extinguish Media

- ☐ Suitable Extinguish Media : Alcohol- resistant foam, AFFF, Carbon dioxide, Extinguish powder, Water
- ☐ Unsuitable Extinguish Media : No data
- ☐ Large fire : Use alcohol- resistant foam or fine water spray to control fire spread.

B. Hazardous Combustion Products :

- ☐ Thermal decomposition products : No data.
- ☐ Fire and Explosion Hazards : Acute risk of fire and explosion

ETAC vapors are slightly heavier than air and may travel long distances toward sources of ignition. Vapors can flow along surfaces to distant ignition sources and flash back.

Vapors may form explosive mixtures with air.

C. Personal Protection and Precautions

Water may not be effective for extinguish fire

Avoid inhalation of the ETAC or Combustion product

Avoid in low and confined areas.

If not dangerous, move containers adjacent fire to safety area.

After extinguish fire, continuously spray the water and cool adjacent containers.

Restrict access to unauthorized personnel. Isolate and restrict area access.

Doc.No.	KAI 1005-1007	MSDS <small>(by article 41 of the occupation safety and health acts)</small>	Issuing Date	2017.3.14.
Page	4/9		Revision Number	6

For avoids cattering, sow spilled material with high pressure water steam.

Restrict access on both side of Tank.

If you hear the emergency bell or see any discoloration of tanks, leave immediately.

Evacuation radius for tank, rail car or tank truck : 0.8 Km (1 / 2 mile)

Stop leak, and than extinguish fire with water spray.

Keep a safe distance during spray the water.

Leave the material burn away.

6. Accidental release measures

A. Personal Precautions

Proper personal protective apparatus : Respiratory protection (Obtained KOSHA certification)
gloves (cannot be penetrated by chemicals)
chemical splash goggle
clothing and footwear (cannot be penetrated by chemicals)

Eliminate all ignition source, heat, flame, spark etc

Do Not touch the leak materials

If a workers is not dangerous, Stop leak chemicals directly

Spraying the water and decrease generation of vapor

B. Environment Precautions

- ☐ Atmosphere : No data
- ☐ Soil : No data
- ☐ Acuatic : No data

C. Methods for cleaning up

☐ Small Spills

Sock up spill with non- combustible absorbent material.

Keep in suitable, closed containers for disposal.

☐ Large Spills

If necessary, contain spill by diking.

Restrict access to area until completion of cleanup.

Avoid in low and confined areas

Notify all governmental agencies as required by law(when spills are much more than a standard).

7 . Handling and Stroage

A. Precaution for Handling : No data

B. Storage : Keep in cool, ventilated storage in closed containers.

Avoid contact with strong oxidizer.

Storage of Materials in accordance with applicable Government and Local government regulations.

Ground/ Bond container and receiving equipment.

Doc.No.	KAI 1005-1007	MSDS <small>(by article 41 of the occupation safety and health acts)</small>	Issuing Date	2017.3.14.
Page	5/9		Revision Number	6

8. Exposure Controls, Personal Protection

A. Allowable contents

- ☐ Domestic : TWA – 400ppm, 1400mg/ m³
- ☐ Biological : No data
- ☐ ACGIH : TWA – 400ppm

B. Engineering Control

Install Sealing equipment and exhaust ventilation

Check the Labor department' s allowance and exposure limits.

If the density have explosion hazards, install ventilation system with explosion proof equipment.

C. Personal Protection

- ☐ Respiratory protection
Wear full face respiratory.(KOSHA Approved)
- ☐ Eye protection
Wear chemical splash goggle.
Eyewash and Showers should be located near work areas.
- ☐ Hand protection
Wear gloves that cannot be penetrated by chemicals.
- ☐ Body protection
Wear clothing and footwear that cannot be penetrated by chemicals.

9. Typical physical and chemical properties

- A. Appearance : Liquid, Clear, Colorless
- B. Odor : Mild characteristic alcohol odor
- C. Odor Threshold : No data
- D. pH : No data
- E. Melting point / Freezing Point : – 84℃
- F. Boiling point : 77℃
- G. Flash point : – 4℃(c.c.)
- H. Evaporation ratio : 6.2
- I. Flammable(Solid, Gas) : Not applicable
- J. Ignition or Explosion range : 2.2 / 11.5%
- K. Vapor : 10 kPa at 20 °C
- L. Solubility : 6.4g/ 100ml at 25℃(water),
Solvent Solubility : Alcohol, Benzene, Ether, Aceton, Chloroform
- M. Vapor Density : 3
- N. n– oktanol/ water partition coefficient : 0.73

Doc.No.	KAI 1005-1007	MSDS <small>(by article 41 of the occupation safety and health acts)</small>	Issuing Date	2017.3.14.
Page	6/9		Revision Number	6

- O. Specific gravity : 0,9003
- P. Autoignition Temperature : 427°C
- Q. Decomposition Temperature : No data
- R. Viscosity : 0.44cP at 25°C
- S. Molecular formular / Weight : CH₃COOC₂H₅ / 88.11

10. Stability and Reactivity

- A. Chemical Stability : Stable at ambient & Atmosphere conditions.
- B. Hazardous Polymerization : Will not occur.
- C. Conditions to avoid : Avoid contact with sparks, heat, open flame, or ignition sources.
- D. Materials to avoid : Acids, Alkalis, Oxidizing agents, Plastic and combustible materials.
- E. Hazardous decomposition products : Carbon oxide.

11. Toxicological Information

A. Primary routes of entry

- ☐ Inhalation : No data
- ☐ Ingestion : No data
- ☐ Skin Contact : No data
- ☐ Eye Contact : No data

B. Effects by Acute and chronic Exposure

- ☐ Acute Toxicity
 - Oral : LD > 5000mg/ kg Excess(Rat)
 - Dermal : LD₅₀ > 18000mg/ kg Excess(Rabbit)
 - Inhalation : LC₅₀ 14620ppm (Rat)
- ☐ Skin corrosive or Irritation : Not Irritated (Clinical trial and rabbit test)
- ☐ Acute eye damages : Irritation on rabbit' s eye but recovered within 7 days.
- ☐ Respiratory hypersensitivity : No data.
- ☐ Skin hypersensitivity : Negativity (Clinical trial and rabbit test)
- ☐ Carcinogenic : ACGIH Group A4
- ☐ Germ Cells Mutagenicity : Negativity (in vivo micronucleus test)
- ☐ Reproductive Toxicity : No data.
- ☐ Target Organ Toxicity (single exposure): Cause respiratory irritation. Exposed to lethal concentration, may cause anesthesia and lung damages.
- ☐ Target Organ Toxicity (repeated exposure): No data.
- ☐ Aspiration hazards : No data.

C. Numerical measures of toxicity (Acute toxicity estimates) : No data.

Doc.No.	KAI 1005-1007	MSDS (by article 41 of the occupation safety and health acts)	Issuing Date	2017.3.14.
Page	7/9		Revision Number	6

12. Ecological Information

A. Aquatic / Terrestrial / Ecology Toxicity

- ☐ Fish : No data
- ☐ Shellfish : No data.
- ☐ Birds : No data.

B. Persistence and Biodegradability

- ☐ Persistence : No data.
- ☐ Biodegradability : No data

C. Bioaccumulation

- ☐ Biodegradability : No data
- ☐ Bioaccumulation : No data

D. Soil mobility : No data

E. Ozone Hazard : No data

F. Other hazardous : No data

13. Disposal Considerations

A. Method of Disposal

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process
- If water separation is possible, pre-process with Water separation process
- Dispose by incineration.

B. Caution

- 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

- A. UN Number : 1173
- B. UN Shipping Name : ETHYL ACETATE,
- C. ADR / RID Class : 3
- D. Packing Group : 2
- E. Marine Pollutant : YES
- F. EmS code
 - ☐ Fire : F- E

○ Spill : S- D

Doc.No.	KAI 1005-1007	MSDS (by article 41 of the occupation safety and health acts)	Issuing Date	2017.3.14.
Page	8/9		Revision Number	6

15. Regulatory Information

A. Occupational Safety and Health Law

- Working environment measurement materials : Ethyl Acetate (Cycle : 6 month),
- Exposure standard setting materials : not applicable
- Managed Hazardous Materials : Ethyl Acetate
- Special medical examination material : not applicable
- Manufacture Restriction Materials : not applicable
- Need Permissioin Materials : not applicable
- Special Managed Materials : not applicable

B. Toxic Chemicals Control Law

- Toxic Materials : Ethyl Acetate
- Emission Survey Materials : not applicable
- Accident Prepare Materials : Ethyl Acetate
- Restriction Materials : not applicable
- Permission Materials : not applicable
- Prohibition Materials : not applicable
- Related Law For Chemicals Registration, evaluation : Existing Chemicals
(Ethyl Acetate, Water)

C. Hazardous Safety Control Law : 4 class Petroleum (insoluble liquid), 200 liter

D. Wastes Control Law : This Product is Industrial Waste(except for appointed Waste) in accordance with Waste Control Acts

E. Other regulation and foreign regulation.

- Persistent Organic Pollutants Control Law : Not application
- EU Regulations
 - Classification results : F ; R11
Xi ; R36
R66
R67
 - Hazard Phases : R11, R36, R66, R67
 - Precaution Phases : S2, S16, S26, S33
- US Regulations2
 - OSHA Regulation (29CFR1910.119) : Not application
 - CERCLA 103 Reulation (40CFR302.4) : 2267.995(kg) 5000(lb)
 - EPCRA 302 Regulation (40CFR355.30) : Not application

Doc.No.	KAI 1005-1007	MSDS (by article 41 of the occupation safety and health acts)	Issuing Date	2017.3.14.
Page	9/9		Revision Number	6

- EPCRA 304 Regulation (40CFR355.40) : Not application
 - EPCRA 313 Regulation (40CFR372.65) : Not application
- ☐ Rotterdam Convention : Not application
- ☐ Stockholm Convention : Not application
- ☐ Montreal Protocol : Not application

16. Other Information

- A. References : MSDS of " Korea Occupational Safety and health Agency"
 TOXNET, U.S. National Library of Medicine
 International Chemical Safety Cards(ICSC)
 ECS- ESIS(European chemical Substances Information System)
 IUCLID Chemical Data Sheet, EC- ECB
 Chemical substances Information System, National Institute of Environmental Research
 Korea Information System for Chemical Safety Management
- B. Original Preparation Date : 2010, 5, 7
- C. Revision number and Revision date : **5 / 2017, Jan. 23.**
6 / 2017, Mar. 14. - Application Of NO.2016-19
Revised Regulation(2016, April, 6. MOEL Notice)
- D. Other No data