LG Chem, Ltd.	MATERIAL SAFETY DATA SHEET	Reg. No	LGDS-EVA-001
		Rev. Date	2013. 11. 08

Ethylene Vinyl Acetate Copolymer (EVA)

1. Product and company identification

a. Product name:

○ Ethylene Vinyl Acetate Copolymer (EVA)

b. Recommended use and restrictions on use :

○ General use : Film, Coating, Foaming, Photovoltaic, Wire&Cable, Hot Melt adhesive, etc.

○ Restriction on Use : Not available

c. Information of manufacturer/supplier/distributor

○ Company name; LG Chem., Ltd.

○ Address; 679, Daejuk-ri, Daesan-eup, Seosan-city, Chungcheongnam-do, 356-715, KOREA

○ Information service or emergency contact no.; +82-41-661-2473

○ Fax number ; +82-41-661-2888

○ Responsible department; High EVA Production team

2. Hazards identification

a. GHS classification;

- This product is not classified as hazardous according to the GHS guideline.

b. Hazard Identification :

○ Hazard symbols : Not applicable

○ Signal word : Not applicable

○ Hazard statement : Not applicable

○ Precautionay statements : Not applicable

c. Other hazards which do not result in classification : Not available

3. Composition / Information on ingredients

Chemical Name	Other name	CAS No. or Reference No.	Content (%)
Acetic acid ethenyl ester	EVA	24937-78-8 /KE-00037	> 99.0

※ Reference No. : KE(Registration number of Korean Existing Chemicals List)

4. First aid measures

a. Eye contact

○ Do not rub your eyes.

○ Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

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b. Skin contact

○ Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

○ Laundering enough contaminated clothing before reuse.

c. Inhalation

○ When exposed to large amounts of steam and mist, move to fresh air.

○ Take specific treatment if needed.

d. Ingestion

○ About whether I should induce vomiting Take the advice of a doctor.

○ Rinse your mouth with water immediately.

e. Notes to physicians :

○ Notify medical personnel of contaminated situation and have them take appropriate protective measures.

5. Fire-Fighting measures

a. Suitable (and unsuitable) extinguishing media

○ Suitable extinguishing media; Dry chemical, carbon dioxide, regular foam, extinguishing agent, spray

○ Unsuitable extinguishing media: Water jet

b. Specific hazards arising from the chemical (e.g. hazardous combustion products)

○ Not available

c. Fire-fighting procedures and equipments :

○ Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.

○ 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.

6. Accidental release measures

a. Personal Precautions, Protective Equipment and Emergency procedures :

○ Ventilate closed spaces before entering.

○ Must work against the wind, let the upwind people to evacuate.

○ Do not touch spilled material. Stop leak if you can do it without risk.

○ Remove all sources of ignition.

b. Environmental Precautions :

○ Prevent runoff and contact with waterways, drains or sewers.

○ If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up :

○ 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 liquid state spills: Appropriate container for disposal of spilled material collected.

○ For disposal of spilled material in appropriate containers collected and clear surface.

7. Handling and storage

a. Handling

○ Avoid contact with incompatible materials.

○ Comply with all applicable laws and regulations for handling.

○ Refer to Engineering controls and personal protective equipment.

○ Operators should wear antistatic footwear and clothing.

b. Storage :

○ Do not apply direct heat.

○ Avoid direct sunlight.

○ Keep in the original container.

○ Please pay attention to incompatibilities materials and conditions to avoid.

○ No open fire.

8. Exposure controls / personal protection

a. Exposure limits

○ Exposure limit under ISHL(KOREA) : Not available

○ ACGIH Exposure Limits : Not available

○ Biological exposure limits : Not available

b. Appropriate engineering controls :

○ A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

c. Personal protective equipment

○ Respiratory Protection ;

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

- Respiratory protection is ranked in order from minimum to maximum.

- Consider warning properties before use.

- Any air-purifying respirator with a corpuscle filter or high efficiency.

- Self-contained breathing apparatus with a corpuscle filter of high efficiency

※ For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

○ Eye Protection:

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

○ Hand Protection :

- Wear appropriate glove.

○ Body Protection :

- Wear appropriate clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

a. Appearance (physical state, color, etc.) ; Variable White Solid (Pellet)

b. Odor ; Slight acetic acid odor

c. Odor threshold ; Not available.

d. pH ; Not applicable.

e. Melting point / freezing point ; 50~110℃

f. Initial boiling point and boiling range ; Not available**.**

g. Flash point ; 260℃

h. Evaporation rate ; Not applicable**.**

i. Flammability(solid, gas) ; Not available**.**

j. Upper/lower flammable or explosive limits ; Not applicable.

k. Vapor pressure ; Not applicable.

l. Solubility ; Insoluble in water.

m. Vaper density ; Not applicable**.**

n. Specific gravity ; 0.920 ~ 0.960

o. Partition coefficient ; n-octanol/water : Not applicable**.**

p. Auto-ignition temperature ; Not applicable

q. Decompositon temperature ; Not applicable**.**

r. Viscosity ; Not applicable**.**

10. Stability and reactivity

a. Stability and possibility of Hazardous Reaction

○ This material is stable under recommended storage and handling conditions.

○ Will not occur.

b. Conditions to avoid :;

○ Avoid contact with incompatible materials and condition.

○ Avoid: Accumulation of electrostatic charges, Heating, Flames and hot surfaces

c. Materials to avoid :

○ Keep away from heat, sparks and flame.

○ Keep away from substance of Mixing prohibition. (e.g. Halogen, Oxidizer, Acid)

d. Hazardous decomposition products

○ May emit flammable vapour if involved in fire.

○ At elevated temperatures the material will begin to decompose, producing fumes that can contain carbon oxides,acrolein, formaldehydes, unidentified organic compounds.

11. Toxicological information

a. Information on the likely routes of exposure

○ (Respiratory) : Not available.

○ (Oral) : Not available.

○ (Eyes, skin) : Not available.

b. Delay and immediate effects and chronic effects from short and long term exposure.

○ Acute toxicity (All routes of possible exposure shall be mentioned.) : Not available

○ Skin corrosion / irritation : Not available

○ Serious eye damage / eye irritation : Not available

○ Respiratory sensitization : Not available

○ Skin sensitization : Not available

○ Carcinogencity : Not available

○ Germ cell mutagenicity : Not available**.**

○ Reproductive toxicity : Not available**.**

○ Specific target organ toxicity (single exposure) : Not available**.**

○ Specific target organ toxicity (repeated exposure : Not available**.**

○ Aspiration hazard : Not available**.**

12. Ecological information

a. Etotoxicity :

○ Acute aquatic toxicity : Not available**.**

b. Persistence and degradability :

○ Persistence : Not available.

○ Degradability : Not available.

c. Bioaccumulative protential :

○ Bioaccumulation : Not available

○ Biodegradability : Not available

d. Mobility in soil : Not available.

e. Other adverse effects : Not available.

13. Disposal considerations

a. Disposal methods

○ The user of this product must properly characterize the waste/container generated from the use of this product in accordance with all applicable federal, state and/or local laws and regulations in order to determine the proper disposal of the waste in accordance with all applicable federal, state and/or local laws and regulations.

b. Precaution for disposal (including the disposal method of contaminated containers and packages)

○ 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 local regulation.

14. Transport information

a. UN Number. ; Not regulated as dangerous goods according to the IMDG Code.

b. UN proper shipping name : Not applicable

c. Transport hazard classes : Not applicable

d. Packing group, if applicable : Not applicable

e. Marine pollutant (Yes/No) : Not applicable

f. Special precautions for user related to transport or transportation measures :

○ EmS FIRE SCHEDULE : Not applicable

○ EmS SPILLAGE SCHEDULE : Not applicable

15. Regulatory information

a. ISHL(The industrial Safety and Health Law in Korea)

○ This product is subject to the chemical for classification and labeling under ISHL Article 41.

○ This product is not subject to the chemical needs monitoring workplace exposure limit under ISHL Article 42.

○ This product is not subject to the chemical specified the exposure limit under ISHL Article 39., Public notice 2013-38.

○ This product is not is subject to regulated hazardous substances under Industrial Health Standards Article 420, 439, 440, Table 12.

b. TCCA(The Toxic Chemical Control Act in Korea) :

○ This product is not classified as Toxic chemical and Observational chemical under TCCA Article 2.3. and 2.4.

c. Dangerous Goods Safety Control Law in Korea:

○ This product is not classified as Dangerous good under the Presidential decree of Dangerous goods Safety Management Law, Table 1.

d. Waste Management Law :

○ This product is classified as Industrial Waste under The Presidential decree of Waste Management Law, Table 1.

e. Other regulations :

○ US Regulations :
- CERCLA 103 regulation (40CFR302.4); Not available.
- SARA 302 regulation (40CFR355.30) : Not available.
- SARA 304 regulation (40CFR355.40) : Not available.
- SARA danger classification, SARA 311/312 regulation (40CFR370.21) : Not available
- SARA 313 regulation (40CFR372.65) : Not available..
- OSHA regulation (29CFR1910.119) : Not available.

○ US state regulations:
- California Safe Drinking Water and Toxic Enforcement Act: Not available.

○ Information of EU Classification : Not classified

○ National substance status
- Toxic Substances Control Act(TSCA) : Exist index.
- TSCA 12(b) export notice : Not exist index.

16. Other information

a. Reference

○ This MSDS is prepared based on the chemical information provided by LG Chem Ltd. and translated into Korean in accordance with ISHL Article 41 and MOL Public notice 2013-37. And add relevant laws and regulations status of internal. Translation into a third language without written permission shall constitute a violation of copyrights, further subject to punishment or legal actions according to domestic or international laws.

○ Reference Sources ;

1) Handbook of Industrial toxication.

2) Chemical Information System.
3) National Institute of Environmental Research (http://ncis.nier.go.kr),
4) Hazardous material information management system,
5) National Emergency Management Agency (http://hazmat.nema.go.kr),
6) IUCLID Chemical Data Sheet, EC-ECB
7) Korea Occupational Safety & Health Agency (http://www.Kosha.net)

b. Issue date : 1989. 01. 01

c. Revision number and last date revised : 2013. 11. 08 (Rev.4)

e. Others : Not available