MATERIAL SAFETY DATA SHEET

SECTION 1. Chemical Product and Manufacturer's Identification

Chemical Name and Synonyms:	Ethylene vinyl alcohol copolymer (EVOH)
Trade Name:	EV-3801V
Chemical Family:	polymer, synthetic resin
Chemical Formula:	$(CH_2\text{-}CH_2)_m\text{-}(CH_2\text{-}CH)_n\text{-}OH$
Supplier Information:	Chang Chun Petrochemical Co., Ltd. 301 Songkiang Road, 7th Fl., Taipei, Taiwan, Tel: 886-2-25038131, 886-2-25001800 Fax: 886-2-25033378
Issue Date: Revision Date:	November 23, 2004 October 11, 2007

SECTION 2. Composition / Information on Ingredients

Ingredient	CAS No	Percent
Ethylene vinyl alcohol copolymer	26221-27-2	> 99%

SECTION 3. Hazards Identification

Emergency Overview:	None
Adverse Human Health Effects:	None known
Environmental Effects:	None
Physical and Chemical Hazards:	Not applicable
Specific Hazards:	None

SECTION 4. First Aid Measures

Inhalation:	If overcome by fumes of heated product or overexposure to finely ground dust, move victim to fresh air. If victim has stopped breathing, administer artificial respiration. Get immediate medical attention.
Ingestion:	If swallowed, seek medical advice immediately and show this container or label. Rinse mouth with water and have a victim drink one or two glasses of water.
Skin Contact:	After contact with skin, wash immediately with plenty of cold water until resin is cooled. Cover with clean cotton sheeting gauze and seek medical advice. Do not attempt to remove material from skin or to remove contaminated clothing.
Eye Contact:	If finely ground dust gets in eyes, rinse immediately with plenty of water to remove particles from eyes.
Protection of First-aider:	None
Notes to Physician：	None

SECTION 5. Fire Fighting Measures

Extinguishing Media:

Dry chemical powder, water, carbon dioxide, are effective.

Fire and Explosion Hazards:

Toxic gases (carbon monoxide) may form when burned without sufficient oxygen.

Special Firefighting Procedures: No Information

Special Equipment for the Protection of Firefighters:

Firefighter should wear self-contained breathing apparatus with full face, operated in positive pressure mode when there is a possibility of exposure to smoke, fumes or hazardous decomposition.

SECTION 6. Accidental Release Measures

Personal Precautions:

Wear appropriate respiratory protection and protective clothing as described in section 8.

Environmental Precautions: None

Methods for Cleaning Up:

Normal procedure for cleanup. Use good housekeeping practices. Contain spilled material. Transfer to secure containers.

SECTION 7. Handling and Storage

Handling:

When handling finely ground EVOH powder, ground all transfer, blending and dust collecting equipment to prevent static sparks. Remove all ignition sources from material handling, transfer and processing areas where dust may be present. Mechanical and local exhaust should be provided in work areas. Do not use near open flame or areas where smoking is permitted. EVOH pellets spilled on walking surfaces constitute a slipping hazard. Work areas should be kept clean and free pellets.

Storage:

Store in a cool, dry, well-ventilated location, and store in a damp-proof bag not to absorb moisture.

SECTION 8. Exposure Controls/Personal Protection

Engineering Measure:

Use with local exhaust ventilation. Make available emergency shower and eye wash in the work area.

Control parameters:

- Limit values:
  PEL (OSHA Permissible Exposure Limit): No OSHA PEL for this compound.
  For nuisance dust: 15 mg/m3 (respirable)-8hours TWA
  TLV (ACGIH Threshold Limited Value): No ACGIH TLV for this compound.
  For nuisance dust: 10 mg/m3-8hours TWA
- Biological Standards: No information available

Personal Protective Equipment:

- Respiratory Protection:
  Where exposure is likely to exceed acceptable criteria, use NIOSH/MSHA approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contamination in air in accordance with OSHA 29 CFR 1910. 134.
- Hand Protection:
  Wear heat protective gloves and clothing if there is a potential contact with heated materials.
- Eye Protection:
  Wear safety glasses meeting the specification of ANSI standard Z87.1 where no contact with eye is anticipated. Chemical safety goggles meeting ANSI standard Z87.1 should be worn if there is a possibility of eye contact.
- Skin and Body Protection:
  Wear heat protective gloves and clothing if there is a potential contact with heated materials.

Specific Hygiene Measures:

SECTION 9. Physical and Chemical Properties

Appearance:	Pellets
Color:	White to straw colored
Melting Point:	160～191℃
Flash Point:	288℃
Density:	1.12～1.20×10^3 kg/m^3
Solubility:	Insoluble in water. Soluble in DMSO.

SECTION 10. Stability and Reactivity

Stability: This material is stable. Hazardous polymerization will not occur.

Possible Hazardous Reactions Occurring under Specific Conditions:

No information available

Conditions to Avoid: Extreme heat above 238℃

Materials to Avoid: No information available

Hazardous Decomposition Products:

Thermal decomposition products may include acetaldehyde, crotonaldehyde, acetone, acetic acid, carbon monoxide, carbon dioxide, hydrocarbons, and other organic vapors.

SECTION 11. Toxicological Information

Acute toxicity:
Oral LD 50 (rat); 6000mg/kg
Dermal LD 50 (rat); 4000mg/kg

Local effects: No information available

Sensitization: No information available

Sub-Chronic Toxicity: 90-Day dog study at dose of 140mg/kg/day found no effects.

Specific effects: No information available

Carcinogenic Effects:
Not known to be a carcinogen. No components of EVOH are carcinogens, as defined in Directive

SECTION 12. Ecological Information

Possible Environmental Effects, Behavior and Fate:

Biodegradability: May be biodegradable.

Bioaccumulation: Not available
Fish Toxicity: Not available

SECTION 13. Disposal Considerations

Recommended Methods for Safe and Environmentally Preferred Disposal:
All recovered material should be disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices.

SECTION 14. Transport Information

International regulations:
This product belongs to non -dangerous goods, not applicable to IATA DGR.

UN classification number: Not applicable

Specific Precautionary Transport Measures and Conditions: ---

SECTION 15. Regulatory Information

Applicable Regulations:

Toxic Substance Control Act (TSCA):
All of the components of this material are listed in TSCA Inventory of Chemical Substances.

Superfund AMENDMENTS AND REAUTHOLRIZATION ACT (SARA):
This material is not considered hazardous pursuant to Title III of SARA and is not considered subject to annual reporting requirements specified by Section 312 and 313 of Title III of SARA and 40 CFR Part 372.

SECTION 16. Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party of for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if the company has been advised of the possibility of such damages.