

# Material Safety Data Sheet



## Fenvastar Plus

Effective Date : May 26, 2011

### 1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

**Material Identification:** Esfenvalerate 8.4% EC

**Tradenames and Synonyms:** FenvaStar Plus

#### Company Identification

##### Manufacturer/ Distributor

LG Life Sciences Ltd.(Head Quarter)  
LG Gwanghwamun Bldg.  
92, Simunno 2-ga, Jongno-gu, Seoul, 110-062, Seoul, Korea.

##### Product Information & Transport Emergency

1-201-816-2310

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Number	%
Esfenvalerate : (S)- $\alpha$ -cyano-3-phenoxybenzyl (S)-2-(4-chlorophenyl)-3-methylbutyrate	66230-04-4	8.4%
Inert ingredients : Solvent and Surfactants		91.6%

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

Warning! May be fatal if swallowed. Harmful if inhaled. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, clothing and wash clothing before reuse. For medical emergencies involving this product, call toll free 1-800-441-3637.

#### Potential Health Effect:

Eye contact may cause eye irritation with tearing, pain or blurred vision.

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(HAZARDS IDENTIFICATION – Continued)

Skin contact with Esfenvalerate may cause a transient (several minutes up to approximately 24 hours) persistent burning or prickling sensation which may be accompanied by visible irritation or rash. Animal data suggests that at high doses, Esfenvalerate may be absorbed through the skin in amounts capable of causing toxic effects.

Eye contact with Esfenvalerate may cause eye irritation with discomfort, tearing, or blurring of vision.

Ingestion of Esfenvalerate may cause nonspecific discomfort, such as nausea, vomiting, headache, or weakness; temporary nervous system effects such as muscular weakness, tremors and incoordination.

Due to physical nature of Esfenvalerate, significant exposure to vapor is not anticipated. However, the compound may be harmful if inhaled and may produce acute transient nervous system effects at high doses.

In individuals with preexisting diseases of the liver, kidney, skin or peripheral nervous system may have increased susceptibility to the toxicity of excessive exposures.

## Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
None				

## 4. FIRST AID MEASURES

### First Aid

**IF SWALLOWED:** Call poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth to mouth, if possible. Call a poison control center or doctor for further treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

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(FIRST AID MEASURES – Continued)

## Notes to Physicians

If on skin, after drying apply vitamin E cream or oil if available. If available. If not available, apply vegetable oil liberally over painful areas. The oil or cream may be used repeatedly until relief is achieved.

Contains xylene range aromatic solvent – vomiting may cause aspiration pneumonia.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

Flash Point : >230F (Contains petroleum distillates)  
Method : TTC

### Extinguishing Media

Water Spray, Water Fog, Dry Chemical, CO2

### Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self contained breathing apparatus. Wear full protective equipment. Use water spray. Cool tank/container with water spray.

## 6. ACCIDENTAL RELEASE MEASURES

### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

### Spill Clean Up

In case of spill or leak, soak up with sand, earth or synthetic absorbent (do not use alkaline absorbents) and dispose of wastes in compliance with local, State and Federal regulations.

Accidental Release Measures CAUTION – COMBUSTIBLE!

LARGE SPILLS: Eliminate potential source of ignition. Wear appropriate respirator and other protective clothing. Shut off source of leak only if safe to do so. Dike and contain. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand, or other suitable material; place in non-leaking containers and seal tightly for proper disposal. Flush area with water to remove trace residue; dispose of flush solution as above.

SMALL SPILLS: Take up with absorbent material and place in non-leaking containers for proper disposal. Do not use alkaline absorbent.

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## 7. HANDLING AND STORAGE

### Handling (Personnel)

Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mist. Wash thoroughly after handling. Wash clothing after use. Discard shoes if contaminated. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

### Storage

Do not contaminate water, food, or feed by storage.

Store in a secure, dry and temperate area. Store in original container. Keep container closed when not in use. Do not store near food or feed. Do not use or store around the home. Avoid contact with water. In case of spill or leak, soak up with sand, earth or synthetic absorbent (do not use alkaline absorbents) and dispose of wastes in compliance with local, State and Federal regulations.

## 8. EXPOSURE CONTROLS / PERSON PROTECTION

### Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Use explosion proof ventilation as required to control vapor concentrations.

Keep liquid and vapor away from heat, sparks or flame. Surfaces that are sufficiently hot may ignite liquid product even in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone. Do not cut, drill, grind or weld on or near container: even emptied containers can contain explosive vapors.

### Personal Protective Equipment

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for category E on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as Barrier Laminate or Neoprene Rubber or Nitrile Rubber or Viton.

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(EXPOSURE CONTROLS / PERSON PROTECTION – Continued)

- Shoes plus socks.
- Protective eyewear

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves, such as Barrier Laminate or Neoprene Rubber or Nitrile Rubber or Viton.
- Shoes plus socks.
- Protective eyewear.

## Exposure Guidelines

Applicable Exposure Limits

ESFENVALERATE

PEL (OSHA) : None Established

TLV (ACGIH) : None Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical Data

pH : 5.16 (1%V emulsion in Type 1 reagent water)  
Odor : Oily/aromatic  
Form : Liquid  
Color : Straw to light amber  
Density : 0.908 g/cc @25 deg C

## 10. STABILITY AND REACTIVITY

### Chemical Stability

Stable at normal temperatures and storage conditions.

### Decomposition

Hydrogen cyanide may be formed by thermal decomposition or reaction with alkaline materials.

### Polymerization

Polymerization will not occur.

# Material Safety Data Sheet

(STABILITY AND REACTIVITY – Continued)

## Other Hazards

Incompatibility: Avoid heat, flame and contact with strong oxidizing agents.

## 11. TOXICOLOGICAL INFORMATION

### Animal Data

Oral LD50: 458 mg/kg in male rats (Moderately toxic)  
Dermal LD50: > 2000 mg/kg in rabbits (Moderately toxic)  
Inhalation 4 hour LC50: 2.93 mg/l in rats (Moderately toxic)

FenvaStar Plus is a slight eye irritant, but is not a skin irritant or skin sensitizer in animal tests.

### ESFENVALERATE

Effects of single dermal exposure include ataxia, tremors, constricted pupils and hind limb incoordination. Dermal exposure of guinea pigs and rabbits to low concentrations of the compound is believed to have resulted in a transient burning sensation in a controlled experiment.

Effects of a single oral dose near the LD50 resulted in nervous system changes including splayed gait, tremors, ataxia, and hind limb incoordination. Repeated doses caused excessive grooming and neurological changes such as limb incoordination, unsteady gait tremors, convulsions, and nonspecific effects such as weight loss.

Tests in animals demonstrate no carcinogenic or developmental toxicity. Reproductive toxicity has not been observed at doses below those causing maternal toxicity.

Tests have shown that Esfenvalerate does not cause genetic damage in bacterial or mammalian cell cultures. It does not produce heritable genetic damage.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information

#### ESFENVALERATE

96 hour LC50 – Bluegill sunfish:	0.26 ug/l.
96 hour LC50 – Rainbow trout:	0.26 ug/l.
96 hour LC50 – Fathead minnows:	0.18 ug/l.

## 13. DISPOSAL CONSIDERATIONS

### Waste Disposal

Do not contaminate water, food, or feed by disposal.

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(DISPOSAL CONSIDERATIONS – Continued)

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### Waste Disposal

Do not contaminate water, food, or feed by disposal.

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops if bees are visiting the treatment area.

### Container Disposal

Triple rinse (or equivalent), then offer for recycling or reconditioning if container reuse is permitted. If container reuse is prohibited, puncture metal containers and dispose of in a sanitary landfill, or by other approved State and local procedures. Dispose of plastic containers in a sanitary landfill, or by incineration if allowed by State and local authorities. If burned, stay out of smoke.

## 14. TRANSPORTATION INFORMATION

### Shipping Information

DOT CLASSIFICATION:

Non-bulk: Not regulated and requires no markings, labels, or placards.

Bulk: UN3082, Environmentally hazardous substance, liquid, n.o.s. (esfenvalerate), 9, PGIII, marine pollutant

(Note for bulk shipments: If labeled or placarded properly, no marine pollutant marking is required)

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(TRANSPORTATION INFORMATION – Continued)

## INTERNATIONAL TRANSPORTATION:

IMO (vessel): UN3082, Environmentally hazardous substance, liquid, n.o.s. (esfenvalerate), 9, PGIII, marine pollutant

IATA (air): UN3082, Environmentally hazardous substance, liquid, n.o.s. (esfenvalerate), 9, PGIII, marine pollutant

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : Yes  
Fire : No  
Reactivity : No  
Pressure : No

Section 302 Extremely Hazardous Substances: None

CERCLA Reportable Quantity: None

This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling . Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

## 16. OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.