

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Section 1 – Chemical Product and Company Identification

Product Name: PermaStar AG

CAS # 52645-53-1

EPA Reg. #: 71532-15-91026

Product Use: Restricted Use Insecticide

Chemical Class: Synthetic Pyrethroid Insecticide

Company Identification: LG Life Science America Inc.
910 Sylvan Avenue
Englewood Cliffs, NJ 07632

Emergency call: 201-816-2310

Transport Emergency: CHEMTREC 1-800-424-9300

Section 2 – Hazards identification

Classification of substance:



Harmful if inhaled

Harmful if swallowed

Harmful in contact with skin

Very Toxic to Aquatic life

Combustible liquid

GHS labeling elements:

The substance is classified and labeled according to the Globally Harmonized System (GHS):

Hazard pictograms:



GHS07

GHS09

Signal Word: Warning

Hazard-determined components of labeling: Permethrin

Hazard statements:

Harmful if inhaled

Harmful if swallowed

Harmful in contact with skin

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Very Toxic to Aquatic life

Combustible liquid

Precautionary Statements:

Prevention:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use only outdoors or in well-ventilated areas

Wash thoroughly after handling.

Avoid Release to the Environment

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing

Keep away from flames and hot surfaces. No smoking.

Wear protective gloves/eye protection/face protection

Response:

If Swallowed: Call poison center or physician if you feel unwell. Rinse mouth.

If inhaled: Remove person to fresh air and keep in position comfortable for breathing. Call a poison center or physician if you feel unwell.

In case of Fire: Remove unauthorized persons and call emergency response. Use foam, carbon dioxide or dry chemical to extinguish.

If in Eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advice or attention.

Collect spillage

If on Skin: Take off contaminated clothing and wash before reuse. Rinse skin with water.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents and containers in accordance with local, regional, national, and international regulations.

NFPA Categories: Health: 1, Flammability: 2, Reactivity: 0

Section 3 – Composition/information of ingredient

Chemical Name	Trade names and Synonyms	Percent	CAS No.
Permethrin	(3-phenoxyphenyl)methyl(±)cis,trans-3-(2,2-dichloroethyl)-2,2-dimethylcyclopropane carboxylate ¹	28.0%	52645-53-1
Inert Ingredients	Aromatic petroleum solvent ²	*	70693-06-0
	Proprietary components		

***Proprietary information**

¹ **cis/trans ratio: minimum 35% (±) cis and maximum 65% trans**

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

² The manufacturer of the aromatic petroleum solvent recommends the occupational exposure limit at 100ppm total hydrocarbon based on composition. According to the AIHA WEEL Guide, the recommended airborne exposure limit for the alcohol-based solvent is 2ppm (8hr. TWA).

Section 4 – First Aid Measures

Symptoms	Aromatic petroleum solvent aspirated into respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death. Squinting eyes, irregular and rattled breathing, ataxia, headache, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects.
Inhalation:	May cause irritation. Remove to fresh air. If person stops breathing or irregular, give artificial respiration and supply oxygen. Call a poison control center or doctor for further treatment advice.
Skin:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes.
Eyes:	May cause irritation. Do not rub eyes. Hold eye open and rinse slowly and gently with for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Ingested	Call a physician or poison control center immediately for treatment advice. Do not induce vomiting as it may cause aspiration pneumonia. Do not give anything by mouth to an unconscious person.

Note to Physicians

This product has low oral, dermal, and inhalation toxicity. It is moderately irritating to the skin and is minimally irritating to the eyes. Reversible skin sensations (paresthesia) may occur and skin salves have been found useful in reducing discomfort. Contains an aromatic petroleum solvent that can produce a severe pneumonitis or fatal pulmonary edema if aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is controlled removal of exposure following by symptomatic and supportive care.

Section 5 – Fire Fighting Measure

Extinguishing media: Foam, carbon dioxide, or dry chemical is preferred. Soft stream water fog only if necessary.

Fire and Explosive Hazards: Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

Special fire fighting procedures: Evacuate the area and fight fire upwind from a safe distance to avoid

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

hazardous decomposition products. Foam Fire-extinguishing system is preferred because uncontrolled water can spread possible contamination. Fireman should wear positive pressed freely breathing devices, complete fire protection clothes and shoes. Do not access if tank is on fire. Use water to cool exposed containers to extinguish fire. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Avoid inhalation of materials or combustion by-product. Vapor or gas is burned at distant ignition sources can be spread quickly. Do not allow fire fighting water to escape into waterways or sewer.

Reference to other sections:

See Section 10 for decomposition products.

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Wear approved respiratory protection, chemically compatible gloves and protective clothing. Keep unprotected persons away. Do not direct water at spill or source leak.

Methods and material for containment and cleaning up:

In case small leak or spill: Absorb using with sand, clay, sawdust, earth or synthetic absorbent and dispose of waste in compliance with local, state, and Federal regulations. Sweep up material, place in a bottle (non-leaking container), and hold for waste disposal. Area can be washed down with a suitable solution of bleach or soda ash and an appropriate alcohol (methanol, ethanol, or isopropanol). Follow this by washing with strong soap and water solution. Absorb any excess liquid as indicated above, and add to the disposal container. Keep product contaminated materials and wash water out of stream and sewers. Wash exposed body areas thoroughly after handling.

In case large leak or spill: 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, 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.

Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

See Section 12 for Environmental Effects

Section 7 – Handling and Storage

Handling

Precautions for safe handling: Do not swallow. Do not get in eyes, on skin or 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. Do not contaminate water, food, or feed by storage. Since emptied containers retain product residue (vapor, liquid, solid) follow all MSDS and label warnings even after container is empty. Keep protective respiratory device available.

Conditions for Safe Storage, including any incompatibilities

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Storage: Store in original container only. Keep container closed when not in use. Do not store near food or feed. Avoid direct sunlight. Do not apply physical shock to container.

Requirements to be met by storerooms and receptacles: Store in a secure, dry and temperate area. Do not use or store around the home.

Reference to other sections:

See Section 10 for incompatibilities

Section 8 – Contact Controls and Personal Protection

Max allowed concentration: No Data

Way of measurement: No Data

Engineering Control: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep risk of inhalation low. Take safety shower after handling equipment. 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 source 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. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline. Ventilate all transport vehicles prior to unloading.

Personal Protection

Respirators: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if the exposure guideline is exceeded, use an air-purifying respirator approved for pesticide (U.S. NIOSH/MSHA, EU CEN, or comparable certification organization)

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles such as splash resistant safety goggles with a secondary protection faceshield. Provide an emergency eye wash station and quick drench shower in the immediate work area.

Body: Wear appropriate chemical resistant overalls and rubber boots and rubber gloves. Avoid any skin exposure. For increased exposures, wear a full body cover barrier suit, such a PVC rain suit. Contaminated leather articles, such as shoes, belts, and watchbands, should be removed and destroyed. Launder all work clothing before reuse. Keep work clothing separated from household laundry.

Hands: Wear appropriate gloves, such as barrier laminate or neoprene rubber or nitrile rubber or Viton.

General protective and hygienic measures: Discard clothing other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Wash contaminated clothing before reuse. 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. No smoking, eating or drinking during handling. Change to clean clothes after washing.

Other conditions: 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 [40CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Section 9 – Physical and Chemical Properties

Information on basic physical and chemical properties

General Information:

Appearance and Physical State: Fluid, mild petroleum odor

Color: light amber

pH Value: 4.5

Viscosity: 80 cps @ 30 rpm

Vapor Pressure (25 °C): Not available

Melting point: Not available

Boiling Point: Not applicable

Specific Gravity: Not available

Comparative concentration (water: 1): Not available (not required for end use)

Quantity of heat in burning (KJ/mol): Not available (not required for end use)

Density (gm/cm³): 1.01

Critical pressure (Mpa): Not available

Critical temperature: Not available

Flash point (C): > 66

Burning temperature (C): Not available

Solubility: Dispersible in water

Section 10 – Stability and Reactivity

Chemical Stability: This material is stable at the normal storage conditions.

Incompatible to Avoid: None Known

Conditions to Avoid: Avoid heating above 150F or 66C. Contains a petroleum derivative solvent which will burn. This product is volatile and may produce vapors which can ignite or explode.

Decomposition Products: Under fire conditions, chlorine, hydrogen chloride, carbon dioxide, carbon monoxide, and aldehydes can be formed.

Hazardous Polymerization: Will not occur

Reference to other sections:

See Section 5 for static discharge potential

Section 11 – Toxicological Information

Acute Toxicity:

LD/LC50 values that are relevant for classification:

Oral: LD₅₀ : 998 mg/kg

Inhalation: LC₅₀ >4.30mg/l

Dermal: LD₅₀ > 2,000 mg/kg

Eyes: Slightly irritating, but doesn't cause injury to eye tissue.

Skin: Not a skin sensitizer

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Primary irritant effect:

On eyes: Slightly irritating to eyes, but does not cause injury to eye tissue. Do not get in eyes or on clothing

If swallowed: No hazards anticipated from swallowing small amounts incidental to normal handling operation. However, swallowing large amounts may cause serious injury, even death. If aspirated (liquid enter the lungs), may cause lung damage or even death due to chemical pneumonia.

If inhaled: Harmful if inhaled. Avoid prolonged or repeated inhalation of vapors may be harmful.

On the skin: Harmful if absorbed through skin. Avoid contact with skin or clothing.

Respiratory sensitization: Single exposure to dust is not likely to be hazardous. Vapors are unlikely due to physical properties.

Skin Sensitization: Product is not considered a contact sensitizer.

Systemic (Other Target Organs) Effect: Excessive exposure may produce effects on the nervous system such as sensitivity to touch and sound, tremors, abnormal movement, and clonic convulsions. Long-term studies with permethrin in laboratory animal resulted in increased liver and kidney weights, induction of the liver microsomal drug metabolizing enzyme system, and histopathological changes in the lungs and liver.

Germ Cell Mutagenicity: Based on a number of in vivo and in vitro studies, it was concluded that permethrin is not a mutagen.

Carcinogenicity: Chronic feeding studies with permethrin in mice and rats indicate limited evidence of oncogenicity in laboratory animals. Based on comprehensive evaluations of all relevant health effects data, it was concluded that the oncogenic potential in humans is extremely weak or nonexistent.

Reproductive Toxicity: Did not cause birth defects in animal studies. Exposures having no effect on the mothers had no effect on the fetuses. The no effect levels in rabbits and rats were 600mg/kg and 50 mg/kg, respectively. Permethrin did not interfere with fertility in animal reproduction studies. The no effect level in atwo-generation rat reproduction stud was 180 mg/kg.

STOT-Single Exposure: Not available

STOT-Repeated Exposure: Not available

Aspiration Hazard: Not available

Preexisting condition: Individual with preexisting disease of the liver, kidney skin of peripheral nervous system my have increased susceptibility to the toxicity of excessive exposure.

Section 12 – Ecological Data

Eco-toxicity:

Permethrin

Fish toxicity: LC₅₀ = 0.5 µg/L to 315 µg/L

Aquatic arthropods: LC₅₀ 0.02 µg/L to 7.6 µg/L

Bird oral Toxicity: LD₅₀ > 3,600 mg/kg

Aquatic Toxicity: Marine species are often more sensitive than the freshwater species. Bacteria, algae, mollusks, and amphibians are much more tolerant of permethrin than the fish and arthropods. Care should be taken to avoid contamination of the aquatic environment.

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Physical Environmental Properties: In soil, permethrin is stable over a wide range of values. When applied at agricultural use rates, permethrin has moderate rate degradation in soil. At termiticidal use rates, permethrin is degraded at a slower rate, which is governed by soil characteristics. Due to its high affinity for organic matter, ($K_{oc} = 86,000$), there is little potential for movement in soil or entry into ground water. Permethrin has a Log P_{ow} of 6.1, but a low potential to bioconcentrate ($BCF = 500$) due to the ease with which it is metabolized.

Bird Toxicity: Longer dietary studies showed that concentrations of up to 500ppm in the diet had no effect on bird reproductions.

Section 13 – Disposal Considerations

Waste Disposal: Do not contaminate water, food, or feed by disposal. Dispose of waste in accordance with all applicable Federal, State, and local laws. Improper disposal of excess pesticide, spray mixture, or rinsate is violation of Federal Law. If the waste 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.

Container Disposal: Do not distribute, make available, furnish or reuse empty containers. 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 authorities, If burned, stay out of smoke.

Section 14 – Transport Information

DOT CLASSIFICATION: This product is not regulated by the DOT in non-bulk packaging.

B/L Freight Classification: Pyrethroid Pesticide, Liquid, Toxic

Class 6.1, UN3352, PGIII

Marine Pollutant, F-A, S-A

Hazard Class or Division: None

Identification Number: None

Packing Group: None

Comments: For water, air, or bulk shipments, use the following description: Environmentally Hazardous Substance, Liquid, N.O.S. (Permethrin 38.0%), Class 9, UN 3082, PG III, Marine Pollutant

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Section 15 – Regulatory Data

Hazard Data	FIFRA Classification/Typical Hazard Labeling, as outlined in EPA Label Review Manual	OSHA HCS Requirement for Section 2 of SDS
Signal Word	CAUTION	WARNING
Acute Toxicity, oral LD ₅₀ 998mg/kg	(Category III) Harmful if swallowed	(Category 4) Exclamation Mark Harmful if swallowed
Acute Toxicity, dermal LD ₅₀ > 2,000 mg/kg	(Category III) Harmful if absorbed through skin	(Category 4) Harmful in contact with skin
Acute Toxicity, inhalation LD ₅₀ >4.30mg/l	(Category IV) Harmful if inhaled	(Category 4) Harmful if inhaled
Skin Irritation	(Category IV) No required hazard label	Not classified
Eye Irritation	(Category III) Cause moderate eye irritation	Not classified
Sensitization	Not labeled	Not classified
Germ Cell Mutagenicity	Not labeled	Not classified
Carcinogenicity	Not labeled	Extremely weak to nonexistent
Reproductive/developmental Toxicity	Not labeled	Not classified
Specific target organ toxicity, single exposure	Not labeled	Not classified
Specific target organ toxicity, repeated exposure	Not labeled	Not classified
Aspiration	Not labeled	Not classified
Environmental (aquatic) toxicity	Extremely toxic to aquatic organisms, including fish and invertebrates	Not within OSHA's jurisdiction, therefore not required on SDS. Optional GHS aquatic toxicity symbol and hazard statement: Very toxic to aquatic life.

FIFRA Classification: This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also included other important information, including direction for use. Following is the hazard information as required on the pesticide label:

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

CAUTION

RESTRICTED USE PESTICIDE

Harmful if swallowed.

Harmful if inhaled.

Harmful if absorbed through skin.

Cause moderate eye irritation

Avoid breathing in spray mist.

This pesticide is extremely toxic to aquatic organisms, including fish and invertebrates.

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical Name	CAS Number	Concentration
Permethrin	52645-53-1	38%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An immediate health hazard
- A delay health hazard
- A fire hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substance" under CERCLA which may require reporting of release:

Category:

Chemical Name	CAS Number	RQ	% in Product
Permethrin	52645-53-1	not listed	38.0%

GHS labeling elements:

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

The substance is classified and labeled according to the Globally Harmonized System (GHS):

Hazard pictograms:



GHS07

GHS09

Signal Word: Warning

Hazard-determined components of labeling: Permethrin

Hazard statements:

Harmful if inhaled

Harmful if swallowed

Harmful in contact with skin

Very Toxic to Aquatic life

Combustible liquid

Precautionary Statements:

Prevention:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use only outdoors or in well-ventilated areas

Wash thoroughly after handling.

Avoid Release to the Environment

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing

Keep away from flames and hot surfaces. No smoking.

Wear protective gloves/eye protection/face protection

Response:

If Swallowed: Call poison center or physician if you feel unwell. Rinse mouth.

If inhaled: Remove person to fresh air and keep in position comfortable for breathing. Call a poison center or physician if you feel unwell.

In case of Fire: Remove unauthorized persons and call emergency response. Use foam, carbon dioxide or dry chemical to extinguish.

If in Eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advice or attention.

Collect spillage

If on Skin: Take off contaminated clothing and wash before reuse. Rinse skin with water.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents and containers in accordance with local, regional, national, and international regulations.

NFPA Categories: Health: 1, Flammability: 2, Reactivity: 0

Safety Data Sheet

PermaStar AG

SDS: 5/10/15

Section 16 – Additional information

Reference: The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein. This Safety Data Sheet was compiled with data and information from the following source: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

MSDS Date issue 4/26/07

SDS Rev. Date: 5/10/15