ENVOY® Plus Herbicide

Safety Data Sheet - GHS

1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: ENVOY® Plus Herbicide
EPA REGISTRATION NUMBER: 59639-132
PRODUCT CODE: 86773
VC NUMBER(S): 1463, 1650, 1900, 1918 and 2042.
SYNONYM(S): None

MANUFACTURER/DISTRIBUTOR
VALENT U.S.A. LLC
P.O. Box 5075
4600 Norris Canyon Road
San Ramon, CA 94583

EMERGENCY TELEPHONE NUMBERS
HEALTH EMERGENCY OR SPILL (24 hr):
(800) 892-0099
TRANSPORTATION (24 hr.): CHEMTREC
(800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION
AGRICULTURAL PRODUCTS: (800) 682-5368

SDS Location: The current SDS is available through our website (www.valent.com), or by calling the product information numbers listed above.

2. HAZARDS IDENTIFICATION

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA-required classifications on the product label. Certain sections of this SDS are superseded by federal law under EPA FIFRA for a registered pesticide. Please see Section 15, REGULATORY INFORMATION for an explanation.

Classification - (per U.S. OSHA 29 CFR 1910.1200 (Hazcom 2012))

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 3
Serious eye damage/eye irritation	Category 2B
Skin Sensitization	Category 1
Carcinogenicity	Category 1B
Aspiration toxicity	Category 1
Flammable liquids	Category 4

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
Harmful if inhaled
May cause an allergic skin reaction
Causes mild eye irritation
Causes mild skin irritation
May cause cancer
May be fatal if swallowed and enters airways
Combustible liquid

Precautionary statements

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required.
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Response
IF EXPOSED OR CONCERNED: Get medical advice/attention
Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Ingestion IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
FIRE In case of fire: Use CO2, dry chemical, or foam for extinction.
Spill None.

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

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
• Toxic to aquatic life with long lasting effects
• Very toxic to aquatic life

For information on Transportation requirements, see Section 14.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%	TRADE SECRET
Clethodim technical	99129-21-2	12.6	
Total hydrocarbons	64742-94-5	40 - 43	-
Naphthalene	91-20-3	<5	*
Others	No CAS#	39 - 43	-

* The chemical name, CAS number and/or exact percentage have been withheld as a trade secret

Other ingredients, which may be maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **(800) 892-0099** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

EYE CONTACT:
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.

SKIN CONTACT:
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.

INGESTION:
Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

INHALATION:
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.

NOTES TO PHYSICIAN:
Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis. If ingested, probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

Flash point °C 72 °C
FLASH POINT: 162° F
Flash point °F 162 °F
FLASH POINT METHOD: SetaFlash Closed Cup
FLAMMABLE LIMITS IN AIR - LOWER (%): No data available
FLAMMABLE LIMITS IN AIR - UPPER (%): No data available
OSHA FLAMMABILITY CLASS: IIIA

NFPA RATING:

Health:	2
Flammability:	2
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

FIRE FIGHTING INSTRUCTIONS: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85 °F.

Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 892-0099
CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300
OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION
Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

UN/NA NUMBER: Not applicable **EMERGENCY RESPONSE GUIDEBOOK NO.:** NA1993

FOR SPILLS ON LAND:

CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

FOR SPILLS IN WATER:

CONTAINMENT: This material forms an emulsion in water. Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

HANDLING:
DO NOT USE OR STORE near flame, sparks or hot surfaces. Use only in well ventilated area. Keep container closed.

DO NOT weld, heat or drill container. Replace cap or bung. Emptied container still contains hazardous or explosive vapor or liquid.

STORAGE:

Do not store near heat or open flame. Do not store at temperatures below 32ºF. If the product is exposed to temperatures below 32ºF, thaw at room temperature to 50ºF or warmer and shake gently to unify the product.

Open dumping is prohibited. Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.
Keep pesticide in original container only. Do not put formulation or dilute spray solution into food or drink containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

EYES & FACE: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

RESPIRATORY PROTECTION: Use this material only in well ventilated areas. If operating conditions result in airborne concentrations of this material, the use of an approved respirator is recommended.

SKIN & HAND PROTECTION: Do not get on skin or clothing. Skin contact should be minimized by wearing protective clothing including coveralls worn over short-sleeved shirt and short pants, socks, chemical-resistant footwear and chemical-resistant gloves. Remove contaminated clothing. Discard clothing and other absorbent materials that may have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Mixers, loaders, applicators and other handlers should refer to the product label before use for detailed information on personal protective equipment (PPE).

EXPOSURE LIMITS

Chemical name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Clethodim technical	None	None	None
Total hydrocarbons	100 mg/m³ TWA (17 ppm) TWA	None	None
Naphthalene	10 ppm TWA, 15 ppm STEL skin - potential for absorption	10 ppm TWA,15 ppm STEL 50 mg/m³ TWA, 75 mg/m³ STEL	None
Others	None	None	Not known

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid		
Appearance	No information available	**Odor**	Mild aromatic
Color	Clear amber	**Odor threshold**	No information available

PROPERTIES	Values	Remarks • Method
pH	4.5	@ 25°C (1% emulsion)
Melting point/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash point	72 °C / 162 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limits	No information available	

Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	No information available
Water solubility	Emulsifiable
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	4.76 cP @ 20° C; 3.15 cP @ 40° C
Explosive properties	No information available
Oxidizing properties	No information available
Liquid Density	7.69 lbs/gal (0.921 g/mL) @ 20° C
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
Not reactive with water, monoammonium phosphate, zinc, and potassium permanganate.

Chemical stability
Unstable at extreme pH's, temperature and upon exposure to UV light.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral Toxicity LD_{50} (rats)	> 5000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD_{50} (rabbits)	> 5000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC_{50} (rats)	2.11 mg/L (4 h)	EPA Tox Category	IV
Eye Irritation (rabbits)	Moderately irritating	EPA Tox Category	III
Skin Irritation (rabbits)	Moderate skin irritation	EPA Tox Category	III
Skin Sensitization (guinea pigs)	Positive, Buehler	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical name	IARC Group 1 or 2	OSHA - Select Carcinogens	NTP Carcinogen List
Total hydrocarbons	Not listed	Not listed	Not listed
Naphthalene	Group 2B	Carcinogen	Suspect Carcinogen
Clethodim technical	Not listed	Not listed	Not listed
Others	Not Listed	Not listed	Not listed

TOXICITY OF CLETHODIM TECHNICAL

SUBCHRONIC: Compound-related effects, noted at high doses of Clethodim Technical in subchronic toxicity studies conducted in mice, rats, and dogs, were decreased body weights, increased liver size (increased liver weights and hypertrophy) and anemia (decreased hemoglobin, hematocrit, or erythrocyte counts).

CHRONIC/CARCINOGENICITY: In chronic studies with Clethodim Technical in the mouse, rat, and dog, similar effects as seen in subchronic have been noted. No treatment related increases in neoplasms were observed in any study.

NEUROTOXICITY: Clethodim technical is not neurotoxic.

IMMUNOTOXICTY: Clethodim technical is not immunotoxic.

DEVELOPMENTAL TOXICITY: Developmental toxicity in rats and rabbits was observed only at maternally toxic dose levels of Clethodim Technical.

REPRODUCTION: No reproductive toxicity was observed in a study with rats exposed to Clethodim Technical for two generations.

MUTAGENICITY: Clethodim Technical was negative in the following genotoxicity assays: microbial reverse mutation (Ames Assay), *in vitro* chromosome aberration assay in Chinese Hamster Ovary Cells, *in vivo* chromosome aberration assay in Rat Bone Marrow Cells and *in vivo* Unscheduled DNA Synthesis Assay. Clethodim Technical does not present a genetic hazard to intact animal systems.

TOXICITY OF OTHER INGREDIENTS:

This product contains a solvent. Solvents, when inhaled, can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possibly unconsciousness and even death. Ingestion of solvents can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged or repeated dermal exposures may cause drying, scaling and even blistering of the skin. Aspiration of low viscosity products can cause chemical pneumonitis which can be fatal. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Symptoms include fatigue, concentration difficulties, anxiety, depression, rapid mood swings and short-term memory loss. The reports are not clear with regard to the types of solvents that may cause these symptoms, and there is controversy amoung scientists to whether the condition exists or is caused by this type of product. Since many other diseases cause some or all of these conditions, a doctor should be consulted if any appear. Acute exposure to naphthalene by inhalation, ingestion, and dermal contact has been associated with hemolytic anemia, damage to the kidneys, cataracts, and, in infants, brain damage. There is limited evidence of fetal and maternal toxicity from exposure to naphthalene.

Chronic (long-term) exposure of workers and rodents to naphthalene has been reported to cause cataracts and damage to the retina. Lesions in the kidneys and thymus, signs of anemia, and reduced spleen weights have been observed in rats and mice chronically exposed via gavage. A National Toxicology Program (NTP) report states that lifetime inhalation exposure to naphthalene resulted in increases in tumors of the nose in rats. In another NTP study, lifetime inhalation exposure to naphthalene increased lung tumors in female mice. The relevance of the rodent findings to humans is unknown. Naphthalene has been listed by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B).

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

12. ECOLOGICAL INFORMATION

AVIAN TOXICITY: The acute toxicity of Clethodim Technical to birds is very low:

Bobwhite quail oral LD_{50}: greater than 2 g/kg;
Bobwhite quail dietary LC_{50}: greater than 6000 ppm;
Mallard duck dietary LC_{50}: greater than 6000 ppm.

No reproductive effects were observed in mallard ducks exposed to 1000 ppm of Clethodim Technical. In Bobwhite quail, a slight decrease in viability of embryos of eggs from females exposed to 1000 ppm was observed. A NOEL was established at 300 ppm for this study.

AQUATIC ORGANISM TOXICITY: Clethodim Technical is only slightly toxic to freshwater fish and practically nontoxic to daphnia:

Rainbow Trout 96-hour LC_{50} = 56 mg a.i./L;
Bluegill Sunfish 96-hour LC_{50} greater than 100 mg a.i./L;
Daphnia magna 48-hour LC_{50}: greater than 100 mg a.i./L.

OTHER NON-TARGET ORGANISM TOXICITY: Clethodim Technical was found to be nontoxic to adult worker bees at the highest dose tested, 100 micrograms/bee.

OTHER ENVIRONMENTAL INFORMATION:
Do not apply directly to water, to areas where surface water is present, or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PRODUCT DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Refer to pesticide label for proper container disposal instructions based on container type and size.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

14. TRANSPORTATION INFORMATION

DOT (ground) SHIPPING NAME: **Non-bulk packaging:** not regulated for transport --see 49CFR 173.150;
Bulk packaging (>119 gal.): NA 1993, Combustible, liquid, n.o.s. (contains Naphthalene), 3, III

EMERGENCY RESPONSE GUIDEBOOK NO.: 128

ICAO/IATA SHIPPING NAME: Not Dangerous Goods

IMDG SHIPPING NAME: Not Dangerous Goods

15. REGULATORY INFORMATION

EPA-FIFRA LABEL INFORMATION THAT DIFFERS FROM OSHA-GHS REQUIREMENTS:

Pesticide products in the U.S. are registered by the EPA under FIFRA and are subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required by OSHA GHS for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the FIFRA pesticide label:

EPA FIFRA SIGNAL WORD: CAUTION

- ***Causes moderate eye irritation***
- ***Harmful if swallowed***
- ***Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals.***
- ***Contains petroleum distillates***
- ***Keep out of reach of children.***

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

U.S. FEDERAL REGULATIONS: Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Naphthalene

Clean Water Act - Hazardous Substances	Present
Clean Water Act Section 307	Present
SARA 313 Chemicals	0.1% de minimis concentration
CERCLA Reportable Quantity (RQ):	100 lb (45.4 kg)

Product Reportable Quantity (RQ): 277 gallons

SARA (311, 312):

Immediate Health:	Yes
Chronic Health:	Yes
Fire:	Yes
Sudden Pressure:	No
Reactivity:	No

STATE REGULATIONS: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Naphthalene

California Proposition 65	carcinogen
California - Directors List of Hazardous Substances	Present
MA Right To Know	Present
NJ Right To Know	1322
PA Right To Know	Environmental hazard

RI Right To Know	Listed
MN Hazardous Substance	Present

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

16. OTHER INFORMATION

REASON FOR ISSUE:	Updated Manufacturer/Distributor Address and General Review.
SDS NO.:	0320
EPA REGISTRATION NUMBER:	59639-132
REVISION NUMBER:	2
REVISION DATE:	09/04/2020
SUPERCEDES DATE:	01/29/2015
RESPONSIBLE PERSON(S):	Valent U.S.A. LLC, Corporate EH&S, (925) 256-2803

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This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom").

The product label provides information specifically for product use in the ordinary course. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label.

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