

1 Identification

· **Product identifier**

· **Trade name:** *PermitPLUS® HERBICIDE*

EPA Registration No.: 81880-26-10163

· **CAS Number:**

Active Ingredient: Halosulfuron-Methyl (67%), CAS:100784-20-1

Thifensulfuron-Methyl (8%), CAS:79277-27-3

· **Relevant identified uses of the substance or mixture and uses advised against**

· *Sector of Use Agriculture use*

· *Application of the substance / the mixture Agricultural Herbicide*

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Gowan Company

P.O. Box 5569

Yuma, Arizona 85366-5569

(928) 783-8844

· **Information department:** *sds@gowanco.com*

· **Emergency telephone number:**

Chemtrec® Emergency Telephone 24 - Hours: (Spills, leak or fire) Inside U.S. & Canada: (800) 424-9300

Outside the U.S. & Canada: +011 (703) 527-3887

For medical emergency (Prosar®): (888) 478-0798

2 Hazard(s) identification

· **Classification of the substance or mixture**



Acute Tox. 4 H302 Harmful if swallowed.

· **Label elements**

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07

· **Signal word:** *Warning*

· **Hazard statements**

Harmful if swallowed.

· **Precautionary statements**

Wash thoroughly after handling.

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

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Hazard description:**

Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



HAZARD INDEX:

4 Severe Hazard
 3 Serious Hazard
 2 Moderate Hazard
 1 Slight Hazard
 0 Minimal Hazard

· **HMIS-ratings (scale 0 - 4)**



HAZARD INDEX:

4 Severe Hazard
 3 Serious Hazard
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· **Other hazards**

- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable in US.
 - **vPvB:** Not applicable in US.

* 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Only the identities of the active ingredient(s) and any hazardous inert ingredients are listed.

· **Dangerous components:**

100784-20-1	Halosulfuron present as methyl ester ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	67.0%
79277-27-3	thifensulfuron-methyl ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	8.0%

* 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

You may also contact 1-888-478-0798 for emergency medical treatment information.

No special measures required.

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- **After 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.
- **After eye contact:**
 - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
 - Remove contact lenses, if present, after first 5 minutes, then continue rinsing eyes.
 - Call a poison control center or doctor for treatment advice.
- **After swallowing:**
 - Call a poison control center or doctor immediately for treatment advice.
 - Have person rinse mouth thoroughly with water, spit out rinse water
 - Have person sip a glass of water if able to swallow.
 - Do not induce vomiting unless told to do so by a poison control center or doctor.
 - Do not give anything by mouth to an unconscious person.
- **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
 - **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
 - **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Keep unnecessary people away and isolate hazard area. Wear appropriate personal protective equipment described in Section 8.
- **Environmental precautions:**
Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark.
- **Methods and material for containment and cleaning up:**
Sweep up spill, scoop or vacuum and remove. Flush residual spill area with water. Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Flush residual spill area with water.
- **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.

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7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

Avoid contact with eyes or clothing. 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. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

- **Information about protection against explosions and fires:** No special measures required.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Store under cool, dry conditions (below 120° F). Do not store under moist conditions.

- **Information about storage in one common storage facility:** Store away from foodstuffs.

- **Further information about storage conditions:** None.

- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **Additional information:**

Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

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.

- **Breathing equipment:** Not required.

- **Protection of hands:**



Protective gloves

- **Material of gloves**

Chemical-resistant gloves made of any waterproof material (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber).

For more options, follow instructions for category A (dry and water-based formulations) on an EPA chemical-resistant category selection chart.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· **Eye protection:**

Safety glasses

· **Body protection:**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical-resistant gloves made of any waterproof material (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber). For more options, follow instructions for category A (dry and water-based formulations) on an EPA chemical-resistant category selection chart.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

- | | |
|---------------------------|------------------|
| · Form: | Granulate |
| · Color: | Light tan |
| · Odor: | Slightly Vanilla |
| · Odour threshold: | Not determined. |

· **pH-value at 20 °C (68 °F):** 5.4· **Change in condition**

- | | |
|---------------------------------------|---------------|
| · Melting point/Melting range: | Undetermined. |
| · Boiling point/Boiling range: | Undetermined. |

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not determined.· **Ignition temperature:**

- | | |
|-------------------------------------|-----------------|
| · Decomposition temperature: | Not determined. |
|-------------------------------------|-----------------|

· **Auto igniting:** Product is not self-igniting.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**

- | | |
|-----------------|-----------------|
| · Lower: | Not determined. |
| · Upper: | Not determined. |

· **Vapor pressure:** Not applicable.· **Density at 20 °C (68 °F):** 0.676 g/cm³ (5.641 lbs/gal)

- | | |
|---------------------------|-----------------|
| · Relative density | Not determined. |
| · Vapour density | Not applicable. |
| · Evaporation rate | Not applicable. |

· **Solubility in / Miscibility with**

- | | |
|-----------------|--------------|
| · Water: | Dispersible. |
|-----------------|--------------|

· **Partition coefficient (n-octanol/water):** Not determined.

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- **Viscosity:**
- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**
 - **Chemical stability** *Stable under normal conditions*
 - **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *Store under cool, dry conditions (below 120°F). Do not store under moist conditons.*
- **Incompatible materials:** *No further relevant information available.*
- **Hazardous decomposition products:** *No dangerous decomposition products known.*

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	2000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rat)
Inhalative	LC50/4 h	>2.07 mg/l (rat)

- **Primary irritant effect:**
 - **on the skin:** *Moderately Irritating*
 - **on the eye:** *Moderately Irritating*
- **Sensitization:** *(Guinea pig) : Positive sensitizer*
- **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

· **NTP (National Toxicology Program)**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

12 Ecological information

- **Toxicity**

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters. This chemical demonstrates the properties and characteristics associated with chemicals detected in

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groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability**

Halosulfuron-methyl is stable in hydrolysis and photolysis in acidic media, but degraded in soils and water/sediment systems.

· **Behavior in environmental systems:**

· **Bioaccumulative potential**

The potential of the substance to accumulate in biota and pass through the food chain is considered to be low based on the low log Pow values.

Partition coefficient (n-octanol/water) log Pow at 23 °C 1.67 (pH 5)
 -0.0186 (pH 7)
 -0.542 (pH 9: unstable)

Bioconcentration BCF: Not required due to low partition coefficient

· **Mobility in soil**

Adsorption/desorption of halosulfuron-methyl was determined with 4 soil types, a range of clay content (4-31%), pH values (5.8-8.0 in water) and organic carbon contents (0.58-2.0%). Halosulfuron-methyl was weakly desorbed and had a high affinity for each soil type.

· **Other information:**

Halosulfuron-methyl has a moderately low vapour pressure ($<1 \times 10^{-7}$ mm Hg at 25 ± 1 °C). This indicates little potential for volatilisation from either soil or plant surfaces. Consequently, this is not a likely route of environmental contamination.

· **Ecotoxicological effects:**

· **Remark:**

Data shown below is applicable to the primary active ingredient, Halosulfuron-Methyl:

Ecotoxicity

Acute fish	(Rainbow trout)	LC50 (96 h)	>131 mg/L
Acute fish	(Bluegill)	LC50 (96 h)	>118 mg/L
Chronic toxicity	(Rainbow trout)	NOEC (87 days)	34 mg/L
Acute toxicity - aquatic invertebrates			
	(Daphnia magna)	EC50 (48 h)	>107 mg/L
	(Mysid shrimp)	EC50 (96 h)	109 mg/L
Chronic toxicity - aquatic invertebrates			
	(Daphnia magna)	NOEC (21 days)	7.2 mg/L
Green algae (S. capricornutum)		EC50 (5 days)	0.0053 mg/L
Blue-green alga (A. flos-aquae)		EC50 (5 days)	0.158 mg/L
Aquatic plants (Lemna gibba G3)		EC50 (7 days)	0.000217 mg/L
Birds (Bobwhite quail)		LD50	> 2,250 mg/kg
		LC50 (5 days)	> 5,620 ppm diet
Birds (Mallard duck)		LC50 (5 days)	> 5,620 ppm diet
		NOEL (reproduction)	> 1000 mg/kg
Bees (Apis mellifera)		LD50 (Oral/Contact)	> 100 µg/bee
Earthworm (Eisenia foetida)		LC50	> 1,000 mg/kg soil
Soil non-target micro-organisms :		No effects on soil nitrification and respiration	
Effects on sewage treatment :		No adverse effect in sewage sludge organisms	

· **Additional ecological information:**

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water
 Do not allow product to reach ground water, water course or sewage system.
 Danger to drinking water if even small quantities leak into the ground.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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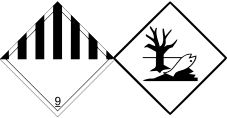
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- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation:**
Wastes resulting from the use of this product that cannot be used or chemically reprocessed must be disposed of in a landfill approved for pesticide disposal in accordance with applicable Federal, state or local procedures, or in such other method as is approved under those procedures.
- **Uncleaned packagings:**
 - **Recommendation:**
Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by burning if allowed by state and local authorities. If burned, stay out of smoke.

14 Transport information

- **UN-Number**
- **DOT** Not Regulated
- **ADR, IMDG, IATA** UN3077
- **UN proper shipping name**
- **ADR** 3077 Environmentally hazardous substances, solid, n.o.s.
(Halosulfuron-Methyl)
- **IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Halosulfuron-Methyl), MARINE POLLUTANT
- **IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Halosulfuron-Methyl)
- **Transport hazard class(es)**
- **ADR, IMDG, IATA**
- 
- **Class** 9 Miscellaneous dangerous substances and articles
- **Label** 9
- **Packing group**
- **ADR, IMDG, IATA** III
- **Environmental hazards:** Product contains environmentally hazardous substances:
Halosulfuron present as methyl ester
- **Marine pollutant:** Yes
Symbol (fish and tree)
- **Special marking (ADR):** Symbol (fish and tree)

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· Special marking (IATA):	Symbol (fish and tree)
· Special precautions for user	Warning: Miscellaneous dangerous substances and articles
· Danger code (Kemler):	90
· EMS Number:	F-A,S-F
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
· UN "Model Regulation":	US DOT: Not regulated ALL OTHERS: UN3077, Environmentally hazardous substances, solid, n.o.s. (Halosulfuron-Methyl), 9, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EPA /FIFRA Information:

This chemical is a pesticide product registered by the 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, and for workplace labels of non-pesticide chemicals.

· **SARA Title III**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

None of the ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**
 Not applicable

· **Signal word:**

(USA EPA) WARNING

· **Hazard statements**

Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

· **Precautionary statements**

Wash thoroughly after handling.

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

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Supply Chain

· **Contact:** sds@gowanco.com

· **Date of preparation / last revision** 07/10/2015 / 4

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

· **Sources PERMIT PLUS® is a registered trademark of Nissan Chemical Industries Ltd.**

· *** Data compared to the previous version altered.**