

1. Identification

Product identifier

Product Name PREsidual®

EPA Reg. No. 1381-272

Other means of identification

UN/ID no See Section 14

Recommended use of the chemical and restrictions on use

Recommended use Agricultural Herbicide

Restrictions on use See label for use restrictions

Details of the supplier of the safety data sheet

Supplier Address

Winfield Solutions, LLC
P.O. Box 64589
St. Paul, MN 55164-0589

For Non-Emergency Business Inquiries:
1-855-494-6343 (Mon-Fri 8am-5pm CST)

Emergency telephone number

Emergency Telephone FOR MEDICAL EMERGENCY: 1-877-424-7452 (24 hrs.)

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL:
CHEMTREC 1-800-424-9300 (24 hrs.)

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|---|
| Eye damage/Eye irritation | Category 2A |
| Acute toxicity - Oral | Category 4 |
| Carcinogenicity | Category 2 |
| Aspiration hazard | Category 1 |
| Specific Target Organ Toxicity - Single Exposure | Category 3 Drowsiness Respiratory Irritation |
| Specific Target Organ Toxicity - Repeat Exposure | Category 2 |
| Flammable liquids | Category 4 (Combustible) |

Hazards not otherwise classified (HNOC)

Not applicable

Signal Word

Danger

Hazard statements

- Causes serious eye irritation.
- Harmful if swallowed.
- May be fatal if swallowed and enters airways.
- May cause damage to organs through prolonged or repeated exposure.
- May cause drowsiness or dizziness.
- May cause respiratory irritation.
- Suspected of causing cancer.
- Combustible liquid.

**Precautionary Statements - Prevention**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Wash face, hands and any exposed skin thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Wear protective gloves, protective clothing and eye protection
 Do not breathe mist, vapors and spray.
 Use only outdoors or in a well-ventilated area.
 Keep away from flames and hot surfaces. No smoking.

Precautionary Statements - Response

IF EXPOSED OR CONCERNED: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

IF SWALLOWED: Immediately call a poison control center or doctor. DO NOT induce vomiting.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison control center or doctor if you feel unwell.

In case of fire: Use CO₂, dry chemical, or foam to extinguish.

Precautionary Statements - Storage

Store locked up.
 Store in a well-ventilated place. Keep cool.
 Keep container tightly closed.

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, state and Federal regulations. See section 13 and the product label for further information on disposal.

3. Composition/information on ingredients

Substance

Not applicable.

| Chemical name | CAS No | Weight-% | Trade secret |
|---|--------------|----------|--------------|
| s-Metolachlor | 87392-12-9 | 58.2 | - |
| Metribuzin | 21087-64-9 | 13.8 | - |
| Solvent Naphtha (Petroleum), Heavy Aromatic | 64742-94-5 | 10 - 30 | * |
| Trade Secret Alcohol | Trade secret | 1-5 | * |
| Naphthalene | 91-20-3 | 1.0-2.0 | * |
| 1,2,4 Trimethylbenzene | 95-63-6 | 0.1-1.0 | * |

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

| | |
|---|---|
| General advice | Have the product container, label or Safety Data sheet with you when calling a poison control center or doctor, or going for treatment. |
| Inhalation | Move person to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention. Aspiration into lungs can produce severe lung damage. Delayed pulmonary edema may occur. |
| Eye contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 - 20 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention. |
| Skin contact | Take off contaminated clothes. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation occurs get medical attention. |
| Ingestion | Get immediate medical advice/attention. DO NOT induce vomiting. DO NOT give any liquid to the person. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. |
| Self-protection of the first aider | Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Do not breathe mist, vapor or spray. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information. |

Most important symptoms and effects, both acute and delayed

| | |
|-----------------|---|
| Symptoms | Eye irritation, Respiratory irritation, Drowsiness, Dizziness |
|-----------------|---|

Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|--|
| Note to physicians | Treat symptomatically. Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances. |
|---------------------------|--|

5. Fire-fighting measures

| | |
|---|---|
| Suitable Extinguishing Media | Dry chemical. Carbon dioxide (CO ₂). Water spray. Alcohol resistant foam. |
| Unsuitable extinguishing media | Do not use solid water stream as it may scatter and spread fire. |
| Specific hazards arising from the chemical | Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. |
| Explosion data | |
| Sensitivity to mechanical impact | None. |
| Sensitivity to static discharge | Yes. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not breathe mist, vapor or spray. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Take precautionary measures against static discharges. Do not touch or walk-through spilled material. Refer to protective measures listed in Sections 7 & 8 for further information.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk-through spilled material. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Do not breathe vapor, mist or spray. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with Federal, state and local regulations. Keep out of the reach of children. Store locked up. Store away from other materials.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH | Other |
|-----------------------------------|--------------------------|--|---|--|
| Metribuzin 21087-64-9 | TWA: 5 mg/m ³ | - | TWA: 5 mg/m ³ | |
| S-metolachlor 87392-12-9 | - | - | - | TWA: 5 mg/m ³ (Source: Manufacturer) |
| Naphthalene 91-20-3 | TWA: 10 ppmS* | TWA: 10 ppm TWA: 50 mg/m ³ | IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³ | |
| 1,2,4 Trimethylbenzene 95-63-6 | TWA: 25 ppm | - | TWA: 25 ppm TWA: 125 mg/m ³ | |

Appropriate engineering controls

| | |
|-----------------------------|--|
| Engineering controls | Showers Eyewash stations Ventilation systems |
|-----------------------------|--|

Individual protection measures, such as personal protective equipment

THE FOLLOWING RECOMMENDATIONS FOR PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL

| | |
|---------------------------------------|--|
| Eye/face protection | Wear chemical safety goggles or safety glasses and full-face shield. Contact lenses are not protective eye devices. |
| Hand protection | Chemical-resistant gloves made of barrier laminate, butyl rubber (≥ 14 mils), nitrile rubber (≥ 14 mils), or Viton (≥ 14 mils). |
| Skin and body protection | Long-sleeved shirt, long pants, chemical resistant footwear plus socks. |
| Respiratory protection | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, use a NIOSH approved air-purifying respirator with an organic vapor (OV) cartridge or canister with an R, P, or HE filter. |
| General hygiene considerations | Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. |

9. Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

| | |
|-----------------------|------------------------|
| Physical state | Liquid |
| Color | Transparent Dark Amber |
| Odor | Mild Aromatic |

| <u>Property</u> | <u>Value</u> |
|---|--|
| pH | 4.5 - 6.5 |
| Melting point / freezing point | No data available |
| Boiling point / boiling range | No data available |
| Flash point | 89°C / 191 °F |
| Flammability (solid, gas) | Not applicable |
| Flammability Limit in Air | No data available |
| Upper flammability or explosive limits | No data available |
| Lower flammability or explosive limits | No data available |
| Vapor pressure | No data available |
| Vapor density | No data available |
| Relative density | 1.07 - 1.09 (water =1) |
| Water solubility | No data available |
| Solubility(ies) | No data available |
| Partition coefficient | No data available |
| Autoignition temperature | No data available |
| Decomposition temperature | No data available |
| Kinematic viscosity | 47.9 centipoise at 25 °C 20.3 centipoise at 41 °C |
| Dynamic viscosity | No data available |
| <u>Other information</u> | |
| Explosive properties | Not explosive |
| Oxidizing properties | Not data available |
| VOC Content (%) | No data available |
| Liquid Density | 9.0 - 9.10 lbs./gallon |

10. Stability and reactivity

| | |
|---|---|
| Reactivity | No dangerous reaction known under conditions of normal use. |
| Chemical stability | Stable under normal conditions. |
| Possibility of hazardous reactions | None under normal processing. |
| Conditions to avoid | Heat, flames and sparks. |
| Incompatible materials | Strong acids. Strong bases. Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur. |

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. Toxicological information

Information on likely routes of exposure

Product Information

| | |
|---------------------|--|
| Inhalation | May cause irritation of respiratory tract, drowsiness or dizziness. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. |
| Eye contact | Causes serious eye irritation. |
| Skin contact | May cause mild skin irritation in certain individuals. Repeated exposure may cause skin dryness or cracking. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. May be fatal if swallowed and enters airways. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. |

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Eye Irritation, Respiratory irritation, Drowsiness, Dizziness

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Acute Oral Toxicity (rat): LD₅₀ is determined to be 3,129 mg/kg.

Acute Dermal Toxicity (rat): LD₅₀ is determined to be greater than 5,050 mg/kg.

Acute Inhalation Toxicity (rat): LC₅₀ is determined to be greater than 5.04 mg/L.

Eye Contact: Based on animal test data this product may cause serious eye irritation.

Skin Contact: Based on animal test data this product was rated as non-irritating.

Skin Sensitization: Animal test data indicates that this product is not a skin sensitizer.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity:

Metribuzin: Metribuzin was investigated for carcinogenicity in chronic feeding studies using rats and mice at maximum levels of 900 and 3200 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.
S-Metolachlor: Did not show carcinogenic effects in animal experiments.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name | ACGIH | IARC | NTP |
|------------------------|-------------------------|--|---------------------------|
| Naphthalene 91-20-3 | A3 Animal Carcinogen | Group 2B Possibly Carcinogenic to Humans | Reasonably Anticipated |

Reproductive/Developmental Effects

S-Metolachlor: Did not show reproductive effects in animal experiments.

Metribuzin: Reproductive toxicity shown in a two-generation study in rats only at dose levels toxic to the parent animals. This reproductive toxicity is related to parental toxicity. Developmental effects seen only at dose levels toxic to the dams. The developmental effects seen are related to maternal toxicity.

Chronic/Subchronic Toxicity Studies

S-Metolachlor: No adverse effect has been observed in chronic toxicity tests.

Metribuzin: Dog and rat feeding studies showed decreases in body weight and food consumption, anemia, liver effects, kidney effects, testicular effects, and mortality.

A dermal toxicity study in rabbits showed effects on cholesterol levels and liver function.

A rat inhalation study showed behavioral changes, decreased body weight gains, liver enzyme induction and organ weight effects.

Animal studies showed evidence of transient neurobehavioral effects after single oral dosing at 5 mg/kg and above. Other screening studies showed no evidence of neurotoxicity at dietary concentrations up to 900 ppm.

Toxicity of Other Components

Solvent Naphtha (Petroleum), Heavy Aromatic: Vapor/aerosol concentrations above recommended exposure are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

1,2,4-Trimethylbenzene: Inhalation of 1,2,4-Trimethylbenzene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma. Effect of chronic exposure to this solvent can include blood disorders (anemia, leukopenia) and kidney or liver damage.

Naphthalene: Exposure to naphthalene can cause cataracts, liver damage, kidney failure, respiratory failure, hematuria, anemia, damage to red blood cells, leukocytosis, or coma. Naphthalene as classified by NTP as an Anticipated Carcinogen and by IARC as a Possible Human Carcinogen.

12. Ecological information

Eco-Acute toxicity

Fish Acute and Prolonged Toxicity:

S-Metolachlor: Rainbow trout 96-hour LC₅₀ = 1.23 mg/l

Metribuzin: Rainbow trout 96-hour LC₅₀ = 42 ppm

Aquatic Invertebrate Acute Toxicity:

S-Metolachlor: *Daphnia magna* 48-hour EC₅₀ = 11.24 mg/l

Metribuzin: *Daphnia magna* 48-hour EC₅₀ = 4.18 ppm

Aquatic Plant Toxicity:

S-Metolachlor: Green algae 72-hour ErC₅₀ = 0.077 mg/l

Metribuzin: Green algae 6-day EC₅₀ = 20.8 ppb

Bird Toxicity:

Metribuzin: Bobwhite Quail 21-day LD₅₀ = 164 mg/kg

Environmental Fate:

Metribuzin: Not persistent in soil. Stable in water. Moderate mobility in soil. Sinks in water (after 24 h).

S-metolachlor: Low bioaccumulation potential. Not persistent in soil. Stable in water. Sinks in water (after 24 h).

13. Disposal considerations

Waste

Dispose of in accordance with applicable Federal, state and local laws and regulations.

Container

Triple rinse and recycle the container or dispose of in accordance with Federal, state and local laws and regulations.

See pesticide product label for full instructions on disposal.

RCRA Characteristics

It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

14. Transport information

DOT (ground)

This product is not regulated by the U.S. DOT as a hazardous material for ground shipment in packages <=119 gallons.

UN/ID no
Proper shipping name
Hazard class
Packing group
RQ
Description

Packages >119 gallons:

NA1993
 Compounds, Weed Killing, Liquid, (Naphthalene)
 Combustible Liquid
 III
 Naphthalene (reached with 694 gallons of product)

Packages >119 gallons to 693 gallons

NA1993, Compounds, Weed Killing, Liquid, (Naphthalene), Combustible liquid, PG III

Packages >= 694 gallons

NA1993, Compounds, Weed Killing, Liquid, (Naphthalene), Combustible liquid, PG III, RQ (Naphthalene)

IATA

Not Determined

IMDG

Not Determined

15. Regulatory information

International Inventories

TSCA Exempt from TSCA, subject to FIFRA

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Chemical name | SARA 313 - Threshold Values % |
|---|-------------------------------|
| Metribuzin (13.8%) - 21087-64-9 | 1.0 |
| Naphthalene (1 - 2%) - 91-20-3 | 0.1 |
| 1,2,4 Trimethylbenzene (0.1-1.0%) - 95-63-6 | 1.0 |

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|------------------------|---|------------------------|---------------------------|----------------------------|
| Naphthalene 91-20-3 | 100 lb. Reached with 694 gallons of product | X | X | X |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

| Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|------------------------|---|------------------------------------|
| Naphthalene 91-20-3 | 100 lb. Reached with 694 gallons of product | - |

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical name | California Proposition 65 |
|-----------------------|---------------------------|
| Naphthalene - 91-20-3 | Carcinogen |

U.S. State Right-to-Know Regulations**US State Regulations**

"X" designates substances disclosed in Section 3 that are listed in State Right-to know regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|-----------------------------------|------------|---------------|--------------|
| Metribuzin 21087-64-9 | X | X | X |
| Trade Secret Alcohol | - | X | X |
| Naphthalene 91-20-3 | X | X | X |
| 1,2,4 Trimethylbenzene 95-63-6 | X | X | X |

U.S. EPA Label Information**EPA Pesticide Registration Number** 1381-272

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. Following is the hazard information required on the pesticide label:

Signal Word: Warning

Hazard Statements: Causes substantial, but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Contains petroleum distillates. Vomiting may cause aspiration pneumonia. Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur.

16. Other information

| | | | | |
|-----------------------------------|----------------------------------|-----------------------|---------------------------|---|
| NFPA | Health hazards 2 | Flammability 2 | Instability 0 | Physical and chemical properties - |
| HMIS | Health hazards 2 * | Flammability 2 | Physical hazards 0 | Personal protection X |
| <i>Chronic Hazard Star Legend</i> | <i>* = Chronic Health Hazard</i> | | | |

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

| | | | |
|---------|-----------------------------|------|----------------------------------|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | * | Skin designation |

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date: July 7, 2021 (new)

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet