MONFERNO™ 250

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifiers

Product name: Monferno™ 250

PMRA Registration No.: 36151

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

Crop protection product, fungicide

Details of the supplier of the safety data sheet

Company: Avesta CropScience Inc.
Address: Suite 2900, Bentall 5
550 Burrard Street
Vancouver, BC, V6C 0A3

Telephone: 1-720-625-2797

Website: https://avestacrop.com

Emergency telephone number: 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (dusts/mists)	Category 4
Skin corrosion/irritation	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration hazard	Category 1

Signal word: Danger
Hazard statements:
Harmful if swallowed.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.

Precautionary statements - prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection and face protection. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe vapour or mist. Use only outdoors or in a well-ventilated area.

Precautionary statements - response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison control centre or doctor.
If on skin: Wash with plenty of soap and water.
If skin irritation occurs, get medical advice or attention.
Take off contaminated clothing and wash before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison control centre or doctor if you feel unwell
If swallowed: Rinse mouth. Immediately call a poison control centre or doctor. Do NOT induce vomiting.

Precautionary statements - storage
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Precautionary statements - disposal
Dispose of contents and container in accordance with local, regional, national or international regulations as applicable.

Other information
May be harmful in contact with skin. Toxic to aquatic life with long-lasting effects. Avoid release to the environment.

Unknown acute toxicity
5.43% of the mixture consists of ingredient(s) of unknown acute oral toxicity. 37.12% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name: Pyraclostrobin
CAS No.: 175013-18-0
Weight-%: 23.6%
Synonym: No data available.

Chemical name: 2-ethylhexan-1-ol
CAS No.: 104-76-7
Weight-%: <3.0%
Synonym: 2-ethylhexanol

Chemical name: Solvent naphtha (petroleum), heavy aromatic
CAS No.: 64742-94-5
Weight-%: < 75
Contains hazardous constituents:
Naphthalene (CAS No. 91-20-3)
1-Methylnaphthalene (CAS No. 90-12-0)
2-Methylnaphthalene (CAS No. 91-57-6)

Chemical name: Proprietary surfactant blend
CAS No.: Not applicable
Weight-%: <5.0
Synonym: No data available

Chemical name: Toluene
CAS No.: 108-88-3
Weight-%: <0.3%
Synonym: Methylbenzene

SECTION 4: FIRST-AID MEASURES

General advice: First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911, then give artificial respiration, preferably mouth-to-mouth if possible. In case of intoxication, call a poison control centre or physician for treatment advice, taking the packaging or the label of the product.
If inhaled: Keep patient calm, remove to fresh air, seek medical attention.
If on skin: Rinse immediately with plenty of water for 15-20 minutes.
If in eyes: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.
If swallowed: Do not induce vomiting unless told to by a poison control centre or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far.

Hazards: Vomiting may cause aspiration pneumonia due to the ingredients.

Note to physician: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Suitable extinguishing media: water spray, foam, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons: Water jet

Special hazards arising from the substance or mixture

Hazards during firefighting: Carbon monoxide, hydrogen chloride, carbon dioxide, nitrogen oxides, organochloric compounds. The substances/groups of substances mentioned can be released in case of fire.

Advice for firefighters

Protective equipment for firefighting: Wear self-contained breathing apparatus and chemical-protective clothing.

Further information: Collect contaminated extinguishing water separately; do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. In case of fire and/or explosion, do not breathe fumes. Keep containers cool by spraying with water if exposed to fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with skin, eyes and clothing.

Environmental precautions
Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

Methods and material for containment and cleaning up
Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling: Handle in accordance with good industrial hygiene and safety practice. Ensure thorough ventilation of stores and work areas. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Remove contaminated clothing and protective equipment before entering eating areas.

Protection against fire and explosion: The product is combustible but not classified as a flammable liquid. Apply normal precautions for handling combustible liquids. Avoid exposure to excessive heat, sparks, or open flame. Take standard measures to prevent the buildup of static electricity. Fire protection measures appropriate for combustible materials should be observed.

Conditions for safe storage, including any incompatibilities
Segregate from foods and animal feeds.

Suitable materials for containers: High density polyethylene (HDPE), fluorinated HDPE

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed. Protect from temperatures below 0°C. Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time. Protect from temperatures above 40°C. Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with occupational exposure limits

Naphthalene
ACGIH TLV
TWA value 10 ppm; Skin designation;
Danger of cutaneous absorption.

Solvent naphtha
ACGIH TLV
TWA value 200 mg/m3 non-aerosol (total hydrocarbon vapour);
Application restricted to conditions in which there are negligible aerosol exposures.
Skin designation non-aerosol (total hydrocarbon vapour);
Danger of cutaneous absorption.

Naphthalene, 1-methyl-
ACGIH TLV
TWA value 0.5 ppm; Skin Designation;
Danger of cutaneous absorption.

Naphthalene, 2-methyl-
ACGIH TLV
TWA value 0.5 ppm;
The substance can be absorbed through the skin.
Danger of cutaneous absorption.

Personal protective equipment

Respiratory protection: Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C chemical/mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection: Chemical resistant protective gloves, protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection: Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures: Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Workplace should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Immediately take off all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid

Odour: Aromatic

Odour threshold: Not determined due to harmful inhalation potential

Colour: Dark yellow

pH value: Approx. 5-7

Density: Approx. 1.06 g/cm^3 (20°C)

Melting point: Approx. -8°C Information applies to the solvent.

Boiling temperature: Approx. 220-293°C. Information applies to the solvent.

Flash point: Approx. 98°C

Flammability: Product is combustible; not classified as a flammable liquid under applicable regulatory criteria.

Lower explosion limit: Approx. 0.7%(V/V). Information applies to the solvent.

Upper explosion limit: Approx. 5.6%(V/V). Information applies to the solvent.

Auto-ignition temperature: Approx. 475°C

Vapour pressure: Approx. 0.05 hPa (approx. 20°C). Information applies to the solvent.

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

Viscosity, kinematic: Approx. 8.5 mm^2/s (40°C)

Solubility in water: Emulsifiable, insoluble

Other information: If necessary, information on other physical and chemical parameters is indicated in this section. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: No hazardous reactions if stored and handled as prescribed/indicated.
Corrosion to metals: Corrosive effects to metal are not anticipated.
Oxidizing properties: Not an oxidizer.
Chemical stability: The product is stable if stored and handled as prescribed/indicated.
Possibility of hazardous reactions: No hazardous reactions if stored and handled as prescribed/indicated.
Conditions to avoid: Avoid sources of ignition. Avoid electro-static discharge. Avoid direct sunlight.
Incompatible materials: Strong bases, strong acids, strong oxidizing agents.
Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.
Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

SECTION 11: TOXICOLOGICAL INFORMATION

Primary routes of exposure: Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute toxicity: Ingestion may be harmful; aspiration into lungs may be fatal.
Type of value: LD50
Species: Rat (female)
Value: 260 mg/kg (OECD Guideline 423)

Dermal
Type of value: LD50
Species: Rat (male/female)
Value: >4,000 mg/kg (OECD Guideline 402)
No mortality was observed.

Assessment other acute effects
Assessment of STOT single: Causes temporary irritation of the respiratory tract.
Target organ: Respiratory system

Irritation/corrosion
Assessment of irritating effects: Eye contact causes irritation. Skin contact causes irritation. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Skin
Species: Rabbit
Result: Irritant
Method: OECD Guideline 404

Eye
Species: Rabbit
Result: Irritant
Method: OECD Guideline 405

Buehler test
Species: Guinea pig
Result: Non-sensitizing
Method: OECD Guideline 406

Chronic toxicity/effects
Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Pyraclostrobin
Assessment of repeated dose toxicity: After repeated exposure, the prominent effect is local irritation. The substance may cause damage to the olfactory epithelium after repeated inhalation.

Information on: 2-ethylhexan-1-ol
Assessment of repeated dose toxicity: No substance-specific organ toxicity was observed after repeated administration to animals. May cause liver and kidney damage.

Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Naphthalene
Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was mutagenic in a mammalian cell culture test system. The substance was not mutagenic in a test with mammals.

Carcinogenicity
Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.
Information on: Pyraclostrobin
Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

Reproductive toxicity
Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity
Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other Information
Misuse can be harmful to health.

Medical conditions aggravated by overexposure: Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish
LC50 (96 h) 0.0229 mg/L, Oncorhynchus mykiss (Directive 84/449/EEC, C.1, static)

Aquatic invertebrates
EC50 (48 h) 0.046 mg/L, Daphnia magna (OECD Guideline 202, part 1, static)

Aquatic plants
EC50 (72 h) 0.69 mg/L (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

Assessment of terrestrial toxicity
Based on available data, the product is not expected to be acutely toxic to terrestrial organisms.

Mobility in soil
Assessment transport between environmental compartments
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Pyraclostrobin
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Additional information
Other ecotoxicological advice: Do not discharge product into the environment without control.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal considerations

Waste disposal of substance: See product label for disposal and recycling instructions.

Container disposal: Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

SECTION 14: TRANSPORTATION INFORMATION

Land transport
TDG (Canada – Ground Transport): Not regulated.

IMDG (Marine Transport)
UN number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class: 9
Packing group: III
Marine pollutant: Yes

IATA (Air Transport)
UN number: UN3082
UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
Class: 9
Packing group: III

SECTION 15: REGULATORY INFORMATION

The following hazard statements are those required on the pest control product label under the Pest Control Products Act and may differ from WHMIS 2015 classification criteria.

Federal Regulations
Registration status:
Crop Protection DSL, CA released/exempt
Chemical DSL, CA released; restriction on quantity/not listed
Labeling requirements under Pest Control Products Act
Read the label, authorized under the Pest Control Products Act, prior to using or handling the pest control product. This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets.

The following is the hazard information required on the pest control product label:
DANGER:
POISON.
Skull and crossbones inside octagon
Eye irritant.
KEEP OUT OF REACH OF CHILDREN.
CAUSES SKIN IRRITATION.
May be fatal if swallowed.
Causes eye irritation.
Do not get in eyes, on skin, or on clothing.
Wash thoroughly after handling.
There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label.

SECTION 16: OTHER INFORMATION

This SDS summarizes our current understanding of the health and safety hazards associated with the product and guides how to handle and use it safely in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace, including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact the company. This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Act (HPA) and the Hazardous Products Regulations (HPR), and follows the requirements of WHMIS 2015.