Safety Data Sheet
Framework® 3.3 EC Herbicide

1. Identification

Product identifier used on the label

Framework® 3.3 EC Herbicide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide

* The “Recommended use” identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

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

MEDICAL EMERGENCY PHONE NUMBER: 1-877-424-7542 (24 HRS)

FOR EMERGENCY, SPILL, LEAK, FIRE EXPOSURE, OR ACCIDENT CALL:
CHEMTREC: 1-800-424-9300

Non-Emergency Business Inquiries: 1-855-494-6343 (Mon-Fri 8 am - 5 pm (Central Standard Time)

Other means of identification

EPA Registration #	1381-216
Synonyms:	pendimethalin

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Asp. Tox.	1	Aspiration hazard
Carc.	2	Carcinogenicity
Repr.	2 (unborn child)	Reproductive toxicity

Aquatic Acute	1	Hazardous to the aquatic environment - acute
Aquatic Chronic	1	Hazardous to the aquatic environment - chronic
STOT SE	3 (Vapours may cause drowsiness and dizziness.)	Specific target organ toxicity — single exposure

Label elements

Pictogram:

Signal Word:
Danger

Hazard Statement:

H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P273	Avoid release to the environment.
P201	Obtain special instructions before use.
P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing mist or vapour or spray.
P202	Do not handle until all safety precautions have been read and understood.

Precautionary Statements (Response):

P312	Call a POISON CENTER or physician if you feel unwell.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P308 + P313	IF exposed or concerned: Get medical attention.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P391	Collect spillage.
P331	Do NOT induce vomiting.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents/container in accordance with local regulations.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

pendimethalin
CAS Number: 40487-42-1
Content (W/W): 37.4 %
Synonym: N-(1-Ethylpropyl)-2,6-dinitro-3,4-xylidine; Pendimethalin

solvent naphtha
CAS Number: 64742-94-5
Content (W/W): >= 25.0 - < 50.0%
Synonym: Solvent naphtha, petroleum, heavy arom.

Naphthalene, 2-methyl-
CAS Number: 91-57-6
Content (W/W): >= 10.0 - < 15.0%
Synonym: No data available.

naphthalene
CAS Number: 91-20-3
Content (W/W): >= 7.0 - < 10.0%
Synonym: Naphthalin

Naphthalene, 1-methyl-
CAS Number: 90-12-0
Content (W/W): >= 5.0 - < 7.0%
Synonym: No data available.

4. First-Aid Measures

Description of first aid measures

General advice:
First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

If on skin:
Immediately wash thoroughly with soap and water, seek medical attention.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting due to aspiration hazard.

Most important symptoms and effects, both acute and delayed

Symptoms: orange-red coloured urine caused by dye (not associated with methemoglobinemia)

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.

Indication of any immediate medical attention and special treatment needed

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

5. Fire-Fighting Measures

Extinguishing media

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

Special hazards arising from the substance or mixture
Hazards during fire-fighting:
carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, To be archived: Hydrocarbons,
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

Advice for fire-fighters
Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

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.

7. Handling and Storage

Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:
The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

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.

Storage stability:
If substance/product crystallizes, thaw at room temperature.
Protect from temperatures below: 0 °C
The product can crystallize below the limit temperature.
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.

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, US:	TWA value 10 ppm ;
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	OSHA Z1:	PEL 10 ppm 50 mg/m3 ;

solvent naphtha	ACGIH, US:	Skin Designation Non-aerosol (total hydrocarbon vapor); Danger of cutaneous absorption
	ACGIH, US:	TWA value 200 mg/m3 Non-aerosol (total hydrocarbon vapor); Application restricted to conditions in which there are negligible aerosol exposures.
Naphthalene, 1-methyl-	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	ACGIH, US:	TLV-SL 3 mg/100 cm2 ;
	ACGIH, US:	TWA value 0.05 ppm ;
Naphthalene, 2-methyl-	ACGIH, US:	TWA value 0.5 ppm ;
	ACGIH, US:	Skin Designation ; The substance can be absorbed through the skin.
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	ACGIH, US:	TLV-SL 3 mg/100 cm2 ;
	ACGIH, US:	TWA value 0.05 ppm ;

Advice on system design:
Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment
RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

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. Work place 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). Take off immediately 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.

9. Physical and Chemical Properties

Form:	liquid
Odour:	aromatic, moderate odour
Odour threshold:	Not determined due to potential health hazard by inhalation.
Colour:	dark amber
pH value:	approx. 6 - 7 (20 - 40 g/l, 20 °C)
Freezing point:	approx. -19 °C Information applies to the solvent.
Boiling point:	approx. 250 °C Information applies to the solvent.
Flash point:	approx. 104 °C Information applies to the solvent.
Flammability:	not applicable
Lower explosion limit:	approx. 0.7 %(V) Information applies to the solvent.
Upper explosion limit:	approx. 5.6 %(V) Information applies to the solvent.
Autoignition:	approx. 491 °C Information applies to the solvent.
Vapour pressure:	approx. 0.05 hPa (20 °C) Information applies to the solvent.
Density:	approx. 1.07 g/cm3 (20 °C)
Vapour density:	not applicable
Self-ignition temperature:	not self-igniting
Thermal decomposition:	226 - 230 °C (DTA) carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, To be archived: Hydrocarbons Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. Under adiabatic conditions the product is capable of self-sustaining progressive thermal decomposition.
Viscosity, dynamic:	approx. 13 mPa.s (23 °C)
Solubility in water:	emulsifiable, insoluble
Molar mass:	281.35 g/mol
Evaporation rate:	not applicable
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this 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
The product is chemically stable.

Conditions to avoid
Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials
Nitric Acid, Sulfuric acid, oxidizing agents, strong alkalies

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:
226 - 230 °C (DTA)
Possible thermal decomposition products:
carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, To be archived: Hydrocarbons
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. Under adiabatic conditions the product is capable of self-sustaining progressive thermal decomposition.

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/Effects

Acute toxicity
Assessment of acute toxicity: Slightly toxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Oral
Type of value: LD50
Species: rat (male/female)
Value: 3,956 mg/kg

Inhalation
Type of value: LC50
Species: rat
Value: > 5.35 mg/l
Exposure time: 4 h

Dermal
Type of value: LD50
Species: rat (male/female)
Value: > 2,000 mg/kg
No mortality was observed.

Assessment other acute effects
Assessment of STOT single:
Possible narcotic effects (drowsiness or dizziness).

Target organ: Central nervous system
The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion
Assessment of irritating effects: May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.

Skin
Species: rabbit
Result: Slightly irritating.

Eye
Species: rabbit
Result: Slightly irritating.

Sensitization
Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Species: guinea pig
Result: Non-sensitizing.

Aspiration Hazard
May also damage the lung at swallowing (aspiration hazard). The product has not been tested. The statement has been derived from the properties of the individual components.

Chronic Toxicity/Effects

Repeated dose toxicity
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: pendimethalin
Assessment of repeated dose toxicity: No substance-specific organtoxicity was observed after repeated administration to animals. Adaptive effects were observed after repeated exposure in animal studies.

Information on: naphthalene
Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The substance may cause damage to the olfactory epithelium after

repeated inhalation. Repeated dermal uptake of the substance did not cause substance-related effects.

Genetic toxicity

Information on: pendimethalin
Assessment of mutagenicity: No mutagenic effect was found in various tests with microorganisms and mammalian cell culture. 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: pendimethalin
Assessment of carcinogenicity: In long-term studies in rats the substance induced thyroid tumors. The effect is caused by an animal specific mechanism that has no human counter part. In long-term studies in mice in which the substance was given by feed, a carcinogenic effect was not observed.

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

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

Information on: pendimethalin
Assessment of teratogenicity: Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Experiences in humans
Pendimethalin is a strongly orange-red compound - virtually an aniline dye. Cases have been described of of orange-yellow colouration of urine following heavy exposure of workers to the dust of pendimethalin. Despite its structure as both a nitro-compound and aromatic amine, exposure to pendimethalin is NOT associated with methemoglobinemia.

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

12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity:
Very toxic (acute effect) to aquatic organisms.

Toxicity to fish

Information on: pendimethalin
LC50 (96 h) 0.196 mg/l, Oncorhynchus mykiss

Aquatic invertebrates

Information on: pendimethalin
EC50 (48 h) 0.147 mg/l, Daphnia magna

Aquatic plants

Information on: pendimethalin
EC50 (72 h) 0.00408 mg/l, Selenastrum capricornutum
EC10 (72 h) 0.00157 mg/l, Selenastrum capricornutum

Chronic toxicity to fish

Information on: pendimethalin
No observed effect concentration (288 d) 0.0063 mg/l, Pimephales promelas
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Chronic toxicity to aquatic invertebrates

Information on: pendimethalin
No observed effect concentration (21 d) 0.0173 mg/l, Daphnia magna
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Assessment of terrestrial toxicity
Acutely harmful to terrestrial organisms.

Persistence and degradability

Assessment biodegradation and elimination (H2O)
Not readily biodegradable (by OECD criteria).

Assessment biodegradation and elimination (H2O)

Information on: pendimethalin

Not readily biodegradable (by OECD criteria).

Bioaccumulative potential

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

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: pendimethalin

The substance will slowly evaporate into the atmosphere from the water surface.
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Additional information

Other ecotoxicological advice:
The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:
Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:
Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA: D028
The waste codes are manufacturer's recommendations based on the designated use of the product. Other use and special waste disposal treatment on customer's location may require different waste-code assignments.

14. Transport Information

Land transport
USDOT

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Hazard class:	9
Packing group:	III
ID number:	UN 3082
Hazard label:	9, EHSM
Marine pollutant:	YES
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains PENDIMETHALIN, SOLVENT NAPHTHA)

Air transport
IATA/ICAO

Hazard class:	9
Packing group:	III

ID number:	UN 3082
Hazard label:	9, EHSM
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains PENDIMETHALIN, SOLVENT NAPHTHA)

Further information
Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Please refer to Section 15 of this SDS for the RQ for this product.

15. Regulatory Information

Federal Regulations

Registration status:
Crop Protection TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

CERCLA RQ	CAS Number	Chemical name
100 LBS	91-20-3	naphthalene

State regulations

State RTK	CAS Number	Chemical name
NJ	91-20-3	naphthalene
	40487-42-1	pendimethalin
	64742-94-5	solvent naphtha
	90-12-0	Naphthalene, 1-methyl-
PA	91-20-3	naphthalene
	64742-94-5	solvent naphtha
	90-12-0	Naphthalene, 1-methyl-
	91-57-6	Naphthalene, 2-methyl-
	107-06-2	1,2-dichloroethane

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

Risk Assessment, CA Prop. 65:

Based on an evaluation of the product's composition and the use(s), this product does not require a California Proposition 65 Warning.

NFPA Hazard codes:
Health: 1 Fire: 1 Reactivity: 1 Special:

Labeling requirements under FIFRA

This chemical is a pesticide product regulated 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 workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.
CAUTION:
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
HARMFUL IF SWALLOWED.
HARMFUL IF ABSORBED THROUGH SKIN.
Causes eye irritation.
Avoid contact with the skin, eyes and clothing.
Wash thoroughly after handling.

16. Other Information

Disclaimer: The information presented herein is based on available data from reliable sources and is correct to the best of WinField Solutions' knowledge. WinField Solutions, LLC makes no warranty, express nor implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

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