

Instinct® II

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	01/13/2023	800080005085	Date of first issue: 01/13/2023

Corteva Agriscience[™] encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : Instinct® II

Manufacturer or supplier's details**COMPANY IDENTIFICATION**

Manufacturer/importer : CORTEVA AGRISCIENCE LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number : 800-992-5994
E-mail address : customerinformation@corteva.com

Emergency telephone : INFOTRAC (CONTRACT 84224).
+1 800-992-5994 or +1 317-337-6009

Recommended use of the chemical and restrictions on use

Recommended use : Stabilizer

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Respiratory sensitization : Category 1
Skin sensitization : Sub-category 1B
Carcinogenicity : Category 2
Aspiration hazard : Category 1

GHS label elements

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Hazard pictograms

:



Signal Word

: Danger

Hazard Statements

: H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351 Suspected of causing cancer.

Precautionary Statements

: **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing mist or vapors.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

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Components

Chemical name	CAS-No.	Concentration (% w/w)
nitrapyrin (ISO)	1929-82-4	16.95
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 10 - < 20
Propylene glycol	57-55-6	>= 10 - < 20
2-Methylnaphthalene	91-57-6	>= 3 - < 10
naphthalene	91-20-3	>= 1 - < 3
1-Methylnaphthalene	90-12-0	>= 1 - < 3
4,6-dichloro-2-trichloromethyl pyridine	1129-19-7	>= 1 - < 3
Sodium lignosulfonate, sulfomethylated	68512-34-5	>= 1 - < 3
Alcohols, C12-14-secondary, ethoxylated	84133-50-6	>= 1 - < 3
2,3,4,5,6-Pentachloropyridine	2176-62-7	>= 0.3 - < 1
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	>= 0.3 - < 1
Balance	Not Assigned	> 10

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
- In case of skin contact : Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.
- In case of eye contact : Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.
- If swallowed : Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).
If potential for exposure exists refer to Section 8 for specific

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personal protective equipment.

Notes to physician : If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Combustion products may include and are not limited to:
Carbon oxides
Hydrogen chloride gas
Sulfur oxides
Ammonia

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.
Use personal protective equipment.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g., by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
Prevent from entering into soil, ditches, sewers, underwater.
See Section 12, Ecological Information.
- Methods and materials for containment and cleaning up : Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped,
Recovered material should be stored in a vented container.
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container.
Keep in suitable, closed containers for disposal.
Wipe up with absorbent material (e.g. cloth, fleece).
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
See Section 13, Disposal Considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid formation of aerosol.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapors/dust.
Do not smoke.
Handle in accordance with good industrial hygiene and safety practice.
Avoid exposure - obtain special instructions before use.
Smoking, eating and drinking should be prohibited in the application area.
Do not get on skin or clothing.
Avoid inhalation of vapor or mist.
Do not swallow.

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Avoid contact with skin and eyes.
 Avoid contact with eyes.
 Keep container tightly closed.
 Take care to prevent spills, waste and minimize release to the environment.
 Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage : Store in a closed container.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Keep in properly labeled containers.
 Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	100 mg/m ³	Corteva OEL
		STEL	300 mg/m ³	Corteva OEL
nitrapyrin (ISO)	1929-82-4	TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
		TWA (Inhalable fraction and vapor)	10 mg/m ³	ACGIH
		STEL (Inhalable fraction and vapor)	20 mg/m ³	ACGIH
		TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA (Total dust)	15 mg/m ³	OSHA P0
		TWA (respirable dust fraction)	5 mg/m ³	OSHA P0
Propylene glycol	57-55-6	TWA	10 mg/m ³	US WEEL
naphthalene	91-20-3	TWA	10 ppm	Dow IHG
		STEL	15 ppm	Dow IHG
		TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	OSHA Z-1

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		TWA	10 ppm 50 mg/m3	OSHA P0
		STEL	15 ppm 75 mg/m3	OSHA P0
2,3,4,5,6-Pentachloropyridine	2176-62-7	TWA	7 mg/m3	Dow IHG
		TWA	5 mg/m3	Corteva OEL
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	C	0.02 ppm 0.2 mg/m3	OSHA Z-1
		C	0.02 ppm 0.2 mg/m3	OSHA P0

Engineering measures : Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use safety glasses (with side shields).

Skin and body protection : Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance : Liquid.

Color : Tan

Odor : Mild

Odor Threshold : No data available

pH : 8.51 (71.2 °F / 21.8 °C)
Method: pH Electrode

Melting point/range : Not applicable

Freezing point : No data available

Boiling point/boiling range : No data available

Flash point : > 212 °F / > 100 °C
Method: Pensky-Martens Closed Cup ASTM D 93, closed cup

Evaporation rate : No data available

Flammability (solid, gas) : Not available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 1.12 g/cm³ (68 °F / 20 °C)
Method: Digital density meter

Solubility(ies)
Water solubility : No data available

Autoignition temperature : No data available

Viscosity
Viscosity, kinematic : No data available

Explosive properties : No

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Oxidizing properties : No significant increase (>5C) in temperature.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : No decomposition if stored and applied as directed.
Stable under normal conditions.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.
None known.

Conditions to avoid : None known.

Incompatible materials : Strong acids
Strong bases
Strong oxidizing agents

Hazardous decomposition products : Decomposition products depend upon temperature, air supply and the presence of other materials.
Decomposition products can include and are not limited to:
Carbon oxides
Hydrogen chloride gas
Sulfur oxides
Ammonia

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Product:**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
Symptoms: No deaths occurred at this concentration.

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.14 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Symptoms: No deaths occurred at this concentration.

Components:**nitrapyrin (ISO):**

Acute oral toxicity : LD50 (Rat, male): 1,072 mg/kg
LD50 (Rat, female): 1,231 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 3.51 mg/l
Exposure time: 4 h

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Test atmosphere: vapor
 Symptoms: No deaths occurred at this concentration., The LC50 value is greater than the Maximum Attainable Concentration.
 Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male and female): 2,830 mg/kg

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : Remarks: Prolonged excessive exposure to mist may cause adverse effects.
 Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.
 Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

LC50 (Rat): > 4.8 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: The substance or mixture has no acute inhalation toxicity

LC50 (Rat): > 0.2 mg/l
 Exposure time: 4 h
 Test atmosphere: vapor
 Symptoms: No deaths occurred following exposure to a saturated atmosphere.
 Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
 Assessment: The substance or mixture has no acute dermal toxicity
 Remarks: For similar material(s):

Propylene glycol:

Acute oral toxicity : LD50 (Rat): > 20,000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): 317.042 mg/l
 Exposure time: 2 h
 Test atmosphere: dust/mist
 Symptoms: No deaths occurred at this concentration.
 Assessment: The substance or mixture has no acute inhalation toxicity
 Remarks: Mist may cause irritation of upper respiratory tract (nose and throat).

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
 Symptoms: No deaths occurred at this concentration.
 Assessment: The substance or mixture has no acute dermal toxicity

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2-Methylnaphthalene:

Acute oral toxicity : Remarks: Low toxicity if swallowed.
Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50 (Rat): 1,630 mg/kg

naphthalene:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Lethal Dose (Humans): 5 - 15 grams

Method: Estimated.

Remarks: Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen.

Ingestion of naphthalene by humans has caused hemolytic anemia.

Toxicity from swallowing may be greater in humans than in animals.

In humans, symptoms may include:

Confusion.

Lethargy.

Muscle spasms or twitches.

Convulsions.

Coma.

Acute inhalation toxicity : Remarks: Excessive exposure may cause irritation to upper respiratory tract (nose and throat).
Excessive exposure may cause lung injury.
Signs and symptoms of excessive exposure may include:
Headache.
Confusion.
Sweating.
Nausea and/or vomiting.

LC50 (Rat): > 0.41 mg/l

Exposure time: 4 h

Test atmosphere: vapor

Symptoms: The LC50 value is greater than the Maximum Attainable Concentration.

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,500 mg/kg
Remarks: Human case reports suggest Naphthalene may be absorbed through the skin in toxic amounts, especially in children.

LD50 (Rabbit): > 2,500 mg/kg

1-Methylnaphthalene:

Acute oral toxicity : LD50 (Rat): 1,840 mg/kg

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Acute dermal toxicity : LDLo (Rabbit): 7,500 mg/kg

4,6-dichloro-2-trichloromethyl pyridine:

Acute oral toxicity : LD50 (Rat): 1,000 - 2,000 mg/kg
Method: Estimated.

Sodium lignosulfonate, sulfomethylated:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: For similar material(s):

Alcohols, C12-14-secondary, ethoxylated:

Acute oral toxicity : LD50 (Rat): > 412 mg/kg

Acute inhalation toxicity : Remarks: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects.
Excessive exposure may cause lung injury.

LC50 (Rat, male and female): 1.06 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 14,000 mg/kg

2,3,4,5,6-Pentachloropyridine:

Acute oral toxicity : LD50 (Rat, male): 435 mg/kg

o-(p-isocyanatobenzyl)phenyl isocyanate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: For similar material(s):

Acute inhalation toxicity : LC50 (Rat): 0.387 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

LC50 (Rat): 2.24 mg/l
Exposure time: 1 h
Test atmosphere: Aerosol
Remarks: For similar material(s):
4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8).

Acute dermal toxicity : LD50 (Rabbit): > 9,400 mg/kg
Remarks: For similar material(s):

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Skin corrosion/irritation**Product:**

Species : Rabbit
Result : No skin irritation

Components:**nitrapyrin (ISO):**

Species : Rabbit
Result : No skin irritation

Propylene glycol:

Species : Rabbit
Result : No skin irritation

4,6-dichloro-2-trichloromethyl pyridine:

Result : Skin irritation

Alcohols, C12-14-secondary, ethoxylated:

Result : Skin irritation

2,3,4,5,6-Pentachloropyridine:

Species : Rabbit
Result : No skin irritation

o-(p-isocyanatobenzyl)phenyl isocyanate:

Result : Skin irritation

Serious eye damage/eye irritation**Product:**

Species : Rabbit
Result : No eye irritation

Components:**nitrapyrin (ISO):**

Species : Rabbit
Result : Eye irritation

Propylene glycol:

Species : Rabbit
Result : No eye irritation

4,6-dichloro-2-trichloromethyl pyridine:

Result : Eye irritation

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Sodium lignosulfonate, sulfomethylated:

Species : Rabbit
Result : Eye irritation

Alcohols, C12-14-secondary, ethoxylated:

Result : Corrosive

2,3,4,5,6-Pentachloropyridine:

Species : Rabbit
Result : No eye irritation

o-(p-isocyanatobenzyl)phenyl isocyanate:

Result : Mild eye irritation

Respiratory or skin sensitization**Product:**

Species : Mouse
Result : The product is a skin sensitizer, sub-category 1B.

Components:**nitrapyrin (ISO):**

Species : Guinea pig
Result : May cause sensitization by skin contact.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Remarks : For similar material(s):
Did not cause allergic skin reactions when tested in humans.

Remarks : For respiratory sensitization:
No relevant data found.

Propylene glycol:

Species : human
Assessment : Does not cause skin sensitization.

naphthalene:

Assessment : Does not cause skin sensitization.
Remarks : Skin contact may cause an allergic skin reaction in a small proportion of individuals.
Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

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4,6-dichloro-2-trichloromethyl pyridine:

Remarks : Not expected to be a skin sensitizer based on Structure-Activity Relationship (SAR).

Remarks : For respiratory sensitization:
No relevant data found.

Alcohols, C12-14-secondary, ethoxylated:

Remarks : Did not cause allergic skin reactions when tested in humans.

Remarks : For respiratory sensitization:
No relevant data found.

2,3,4,5,6-Pentachloropyridine:

Assessment : May cause sensitization by skin contact.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Assessment : May cause sensitization by skin contact.

Remarks : For similar material(s):
Skin contact may cause an allergic skin reaction.
Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Assessment : May cause sensitization by inhalation.

Remarks : May cause allergic respiratory reaction.
MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Germ cell mutagenicity**Components:****nitrapyrin (ISO):**

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

Propylene glycol:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

2-Methylnaphthalene:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative.

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naphthalene:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative in some cases and positive in other cases.

2,3,4,5,6-Pentachloropyridine:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Germ cell mutagenicity - Assessment : For similar material(s);, Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

Carcinogenicity**Components:****nitrapyrin (ISO):**

Carcinogenicity - Assessment : Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Contains naphthalene which has caused cancer in some laboratory animals., In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

Propylene glycol:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

2-Methylnaphthalene:

Carcinogenicity - Assessment : Available data are inadequate to evaluate carcinogenicity.

naphthalene:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Has caused cancer in some laboratory animals., In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

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o-(p-isocyanatobenzyl)phenyl isocyanate:

Carcinogenicity - Assessment : Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

IARC Group 2B: Possibly carcinogenic to humans
naphthalene 91-20-3

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP Reasonably anticipated to be a human carcinogen
naphthalene 91-20-3

Reproductive toxicity**Components:****nitrapyrin (ISO):**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Exposures having no effect on the mother should have no effect on the fetus., Did not cause birth defects in laboratory animals.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Reproductive toxicity - Assessment : Did not cause birth defects or any other fetal effects in laboratory animals.

Propylene glycol:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility. Did not cause birth defects or any other fetal effects in laboratory animals.

naphthalene:

Reproductive toxicity - Assessment : Available data are inadequate to determine effects on reproduction. Did not cause birth defects in laboratory animals.

2,3,4,5,6-Pentachloropyridine:

Reproductive toxicity - Assessment : Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Reproductive toxicity - Assessment : For similar material(s);, Has been toxic to the fetus in laborato-

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essment ry animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

STOT-single exposure**Product:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Components:**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Propylene glycol:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

2-Methylnaphthalene:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

naphthalene:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

1-Methylnaphthalene:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

4,6-dichloro-2-trichloromethyl pyridine:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

Alcohols, C12-14-secondary, ethoxylated:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

2,3,4,5,6-Pentachloropyridine:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Routes of exposure : Inhalation
 Target Organs : Respiratory Tract
 Assessment : May cause respiratory irritation.

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STOT-repeated exposure**Components:****o-(p-isocyanatobenzyl)phenyl isocyanate:**

Routes of exposure : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Components:****nitrapyrin (ISO):**

Remarks : In animals, effects have been reported on the following organs:
Kidney.
Liver.
Blood.
Female reproductive organs.
Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Remarks : In animals, effects have been reported on the following organs:
Lung.
Gastrointestinal tract.
Thyroid.
Urinary tract.
Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.
Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust.

Propylene glycol:

Remarks : In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

2-Methylnaphthalene:

Remarks : In animals, effects have been reported on the following organs:
Lung.
However, the effects are species specific and are not relevant to humans.

naphthalene:

Remarks : Observations in animals include:
Respiratory effects.
Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen.

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Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust. Ingestion of naphthalene by humans has caused hemolytic anemia.

1-Methylnaphthalene:

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

4,6-dichloro-2-trichloromethyl pyridine:

Remarks : No relevant data found.

Sodium lignosulfonate, sulfomethylated:

Remarks : For similar material(s):
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Alcohols, C12-14-secondary, ethoxylated:

Remarks : Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

2,3,4,5,6-Pentachloropyridine:

Remarks : In animals, effects have been reported on the following organs:
Kidney.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Remarks : Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

Aspiration toxicity**Components:****nitrapyrin (ISO):**

Based on physical properties, not likely to be an aspiration hazard.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

Propylene glycol:

Based on physical properties, not likely to be an aspiration hazard.

2-Methylnaphthalene:

Based on physical properties, not likely to be an aspiration hazard.

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naphthalene:

Based on physical properties, not likely to be an aspiration hazard.

1-Methylnaphthalene:

May be harmful if swallowed and enters airways.

4,6-dichloro-2-trichloromethyl pyridine:

Based on available information, aspiration hazard could not be determined.

Sodium lignosulfonate, sulfomethylated:

Based on physical properties, not likely to be an aspiration hazard.

Alcohols, C12-14-secondary, ethoxylated:

Based on physical properties, not likely to be an aspiration hazard.

2,3,4,5,6-Pentachloropyridine:

Based on physical properties, not likely to be an aspiration hazard.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Based on physical properties, not likely to be an aspiration hazard.

SECTION 12. ECOLOGICAL INFORMATION
Ecotoxicity**Components:****nitrapyrin (ISO):**

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.4 - 7.9 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 or Equivalent
		LC50 (Rainbow trout (Oncorhynchus mykiss)): 4 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (eastern oyster (Crassostrea virginica)): 1.8 mg/l Exposure time: 96 h Test Type: flow-through test
		LC50 (Daphnia magna (Water flea)): 2.2 mg/l Exposure time: 48 h Test Type: flow-through test
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.7 mg/l End point: Growth rate inhibition Exposure time: 72 h

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Toxicity to fish (Chronic toxicity) : NOEC (Fathead minnow (*Pimephales promelas*)): 2.87 mg/l
Exposure time: 34 d

Toxicity to soil dwelling organisms : LC50 (*Eisenia fetida* (earthworms)): 209 mg/kg
Exposure time: 15 d
End point: survival

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg)., Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

oral LD50 (*Anas platyrhynchos* (Mallard duck)): 2708 mg/kg bodyweight.

dietary LC50 (*Anas platyrhynchos* (Mallard duck)): 1466 mg/kg diet.

dietary LC50 (*Coturnix japonica* (Japanese quail)): 820 mg/kg diet.

oral LD50 (*Apis mellifera* (bees)): > 100 µg/bee
Exposure time: 48 h

contact LD50 (*Apis mellifera* (bees)): > 100 µg/bee
Exposure time: 48 h

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Toxicity to fish : Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50 (*Oncorhynchus mykiss* (rainbow trout)): 3.0 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 1.1 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 7.9 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia pulex* (Water flea)): 5.2 mg/l
End point: mortality
Exposure time: 21 d
Method: Method Not Specified.

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm)., Material is practically non-toxic to

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birds on an acute basis (LD50 > 2000 mg/kg).

dietary LC50 (*Colinus virginianus* (Bobwhite quail)): > 6,500 ppm
Exposure time: 5 d

oral LD50 (*Colinus virginianus* (Bobwhite quail)): > 2,250 mg/kg

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Propylene glycol:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 40,613 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (*Ceriodaphnia dubia* (water flea)): 18,340 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): 19,000 mg/l
End point: Growth rate inhibition
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Ceriodaphnia dubia* (water flea)): 13,020 mg/l
End point: number of offspring
Exposure time: 7 d
Test Type: semi-static test

Toxicity to microorganisms : NOEC (*Pseudomonas putida*): > 20,000 mg/l
Exposure time: 18 h

2-Methylnaphthalene:

Toxicity to fish : Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50 (*Oncorhynchus mykiss* (rainbow trout)): 1.5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 1.5 mg/l
Exposure time: 48 h

naphthalene:

Toxicity to fish : Remarks: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

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LC50 (Oncorhynchus mykiss (rainbow trout)): 0.11 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.6 - 24.1 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 0.4 mg/l
Exposure time: 72 h
Test Type: Growth rate inhibition

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC (Other): 0.37 mg/l
End point: mortality
Exposure time: 40 d
Test Type: flow-through

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

1-Methylnaphthalene:

Toxicity to fish : Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50 (Pimephales promelas (fathead minnow)): 9 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.2 - 1.4 mg/l
Exposure time: 48 h

Alcohols, C12-14-secondary, ethoxylated:

Toxicity to fish : Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50 (Pimephales promelas (fathead minnow)): 3.2 - 3.6 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 7.3 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to microorganisms : EC50 (Bacteria): > 1,000 mg/l
Exposure time: 16 h

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2,3,4,5,6-Pentachloropyridine:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.47 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 4 mg/l
End point: Growth rate inhibition
Exposure time: 96 h
Test Type: static test

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 1,000 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent
Remarks: For similar material(s):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 24 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent
Remarks: For similar material(s):

Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 1,640 mg/l
End point: Growth rate inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent
Remarks: For similar material(s):

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
End point: Respiration rates.
Exposure time: 3 h
Test Type: static test
Remarks: Based on information for a similar material:

Toxicity to soil dwelling organisms : Test Type: Based on information for a similar material:
EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 14 d
Method: Other guidelines

Plant toxicity : EC50: 1,000 mg/l
End point: Growth inhibition
Test period: 14 d
Species: Avena sativa (oats)
Method: Other guidelines

EC50: 1,000 mg/l
End point: Growth inhibition

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Test period: 14 d
 Species: Lactuca sativa (lettuce)
 Method: Other guidelines

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Persistence and degradability**Components:****nitrapyrin (ISO):**

Biodegradability : Remarks: Chemical degradation (hydrolysis) is expected in the environment within days to weeks.
 Degradation is expected in the soil environment within days to weeks.

ThOD : 0.97 kg/kg

Stability in water : Test Type: Hydrolysis
 Degradation half life (half-life): 186 h (25 °C) pH: 5

Test Type: Hydrolysis
 Degradation half life (half-life): 173 - 233 h (25 °C) pH: 7

Test Type: Hydrolysis
 Degradation half life (half-life): 129 h (25 °C) pH: 9

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Biodegradability : Remarks: Biodegradation may occur under aerobic conditions (in the presence of oxygen).
 Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Biodegradation: 30 - 41 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301D or Equivalent
 Remarks: 10-day Window: Fail

Propylene glycol:

Biodegradability : aerobic
 Result: Readily biodegradable.
 Biodegradation: 81 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301F or Equivalent
 Remarks: 10-day Window: Pass

Biodegradation: 96 %
 Exposure time: 64 d
 Method: OECD Test Guideline 306 or Equivalent

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Remarks: 10-day Window: Not applicable

Biochemical Oxygen Demand (BOD) : 69.000 %
Incubation time: 5 d

70.000 %
Incubation time: 10 d

86.000 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 1.53 kg/kg

ThOD : 1.68 kg/kg

Photodegradation : Rate constant: 1.28E-11 cm³/s
Method: Estimated.

2-Methylnaphthalene:

Biodegradability : Result: Not readily biodegradable.
Remarks: Expected to degrade slowly in the environment.

naphthalene:

Biodegradability : Remarks: Biodegradation under aerobic static laboratory conditions is high (BOD₂₀ or BOD₂₈/ThOD > 40%).

Biochemical Oxygen Demand (BOD) : 57.000 %
Incubation time: 5 d

71.000 %
Incubation time: 10 d

71.000 %
Incubation time: 20 d

ThOD : 3.00 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Concentration: 1,500,000 1/cm³
Rate constant: 2.16E-11 cm³/s
Method: Estimated.

1-Methylnaphthalene:

Biodegradability : Result: Not readily biodegradable.
Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: 0 - 2 %
Exposure time: 28 d
Method: OECD Test Guideline 301C or Equivalent

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Remarks: 10-day Window: Not applicable

Sodium lignosulfonate, sulfomethylated:

Biodegradability : Result: Not readily biodegradable.

Alcohols, C12-14-secondary, ethoxylated:

Biodegradability : Result: Readily biodegradable.
Remarks: For similar material(s):
Material is readily biodegradable. Passes OECD test(s) for
ready biodegradability.

Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: 10-day Window: Not applicable

Biochemical Oxygen Demand (BOD) : 22 - 33 %
Incubation time: 5 d

40 - 53 %
Incubation time: 10 d

59 - 82 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 2.07 kg/kg

ThOD : 2.10 kg/kg

2,3,4,5,6-Pentachloropyridine:

ThOD : 0.64 kg/kg

o-(p-isocyanatobenzyl)phenyl isocyanate:

Biodegradability : Result: Not biodegradable
Remarks: In the aquatic and terrestrial environment, material
reacts with water forming predominantly insoluble polyureas
which appear to be stable.
In the atmospheric environment, material is expected to have
a short tropospheric half-life, based on calculations and by
analogy with related diisocyanates.

Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent
Remarks: 10-day Window: Not applicable

Bioaccumulative potential**Components:**

nitrapyrin (ISO):

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Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
 Bioconcentration factor (BCF): < 85
 Exposure time: 30 d
 Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.324
 Method: Measured
 Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Bioaccumulation : Species: Fish
 Bioconcentration factor (BCF): 61 - 159

Partition coefficient: n-octanol/water : log Pow: 2.9 - 6.1
 Method: Measured
 Remarks: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Propylene glycol:

Bioaccumulation : Bioconcentration factor (BCF): 0.09
 Method: Estimated.

Partition coefficient: n-octanol/water : log Pow: -1.07
 Method: Measured
 Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

2-Methylnaphthalene:

Partition coefficient: n-octanol/water : log Pow: 3.86
 Method: Estimated.
 Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

naphthalene:

Bioaccumulation : Species: Fish
 Bioconcentration factor (BCF): 40 - 300
 Exposure time: 28 d
 Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.3
 Method: Measured
 Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

1-Methylnaphthalene:

Partition coefficient: n-octanol/water : log Pow: 3.87
 Method: Estimated.
 Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

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4,6-dichloro-2-trichloromethyl pyridine:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

Sodium lignosulfonate, sulfomethylated:

Partition coefficient: n-octanol/water :

Remarks: For similar material(s):
Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Alcohols, C12-14-secondary, ethoxylated:

Bioaccumulation : Bioconcentration factor (BCF): 29
Method: Estimated.

Partition coefficient: n-octanol/water : log Pow: 2.72
Method: Estimated.

2,3,4,5,6-Pentachloropyridine:

Partition coefficient: n-octanol/water :

log Pow: 3.53
Method: Measured
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

o-(p-isocyanatobenzyl)phenyl isocyanate:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 92
Exposure time: 28 d
Concentration: 0.0008 mg/l
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water : Remarks: Reacts with water.
In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Balance:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

Mobility in soil**Components:****nitrapyrin (ISO):**

Distribution among environmental compartments : Koc: 321
Method: Measured

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Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

Stability in soil : Dissipation time: 3 - 35 d

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Distribution among environmental compartments : Remarks: No data available.

Propylene glycol:

Distribution among environmental compartments : Koc: < 1
Method: Estimated.
Remarks: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Potential for mobility in soil is very high (Koc between 0 and 50).

2-Methylnaphthalene:

Distribution among environmental compartments : Remarks: No relevant data found.

naphthalene:

Distribution among environmental compartments : Koc: 240 - 1300
Method: Measured
Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

4,6-dichloro-2-trichloromethyl pyridine:

Distribution among environmental compartments : Remarks: No relevant data found.

Sodium lignosulfonate, sulfomethylated:

Distribution among environmental compartments : Remarks: Expected to be relatively immobile in soil (Koc > 5000).

Alcohols, C12-14-secondary, ethoxylated:

Distribution among environmental compartments : Remarks: No specific, relevant data available for assessment.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Distribution among environmental compartments : Remarks: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Balance:

Distribution among environmental compartments : Remarks: No relevant data found.

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Other adverse effects**Components:****nitrapyrin (ISO):**

- Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
- Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

- Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
- Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Propylene glycol:

- Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
- Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

2-Methylnaphthalene:

- Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
- Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

naphthalene:

- Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
- Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

1-Methylnaphthalene:

- Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
- Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

4,6-dichloro-2-trichloromethyl pyridine:

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Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sodium lignosulfonate, sulfomethylated:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Alcohols, C12-14-secondary, ethoxylated:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

2,3,4,5,6-Pentachloropyridine:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

o-(p-isocyanatobenzyl)phenyl isocyanate:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or

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listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14. TRANSPORT INFORMATION
International Regulations**UNRTDG**

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Solvent naphtha (petroleum), heavy aromatic, Nitrapyrin)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Solvent naphtha (petroleum), heavy aromatic, Nitrapyrin)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Solvent naphtha (petroleum), heavy aromatic, Nitrapyrin)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes
Remarks	:	Stowage category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**49 CFR**

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Naphthalene)
Class	:	9

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Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no
Reportable Quantity	:	Naphthalene only regulated in pack sizes > 1,877 kg

Further information

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Respiratory or skin sensitization
Carcinogenicity
Aspiration hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

nitrapyrin (ISO)	1929-82-4	>= 10 - < 20 %
naphthalene	91-20-3	>= 1 - < 5 %

US State Regulations**Pennsylvania Right To Know**

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5
nitrapyrin (ISO)	1929-82-4
Propylene glycol	57-55-6
naphthalene	91-20-3
1-Methylnaphthalene	90-12-0

California Prop. 65

WARNING: This product can expose you to chemicals including nitrapyrin (ISO), naphthalene, 1,4-dioxane, ethylene oxide, formaldehyde, acetaldehyde, which is/are known to the State of California to cause cancer, and nitrapyrin (ISO), ethylene oxide, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.

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TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-657

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 as required on the pesticide label:

CAUTION

Causes moderate eye irritation

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16. OTHER INFORMATION

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
Corteva OEL	:	Corteva Occupational Exposure Limit
Dow IHG	:	Dow Industrial Hygiene Guideline
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
Corteva OEL / STEL	:	Short term exposure limit
Corteva OEL / TWA	:	Time weighted average
Corteva OEL / TWA	:	8-hr TWA
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / STEL	:	Short term exposure limit
Dow IHG / TWA	:	Time weighted average
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA P0 / C	:	Ceiling limit
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-1 / C	:	Ceiling
US WEEL / TWA	:	8-hr TWA

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AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 01/13/2023

Product code: GF-2937

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.

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