SAFETY DATA SHEET

Instinct NXTGEN™

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	03/02/2022	800080005797	Date of first issue: 03/02/2022

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 NXTGEN™

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).

800-992-5994 or 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)

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
nitrapyrin (ISO)	1929-82-4	25.97
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 3 - < 10

Sodium chloride	7647-14-5	>= 3 - < 10
Decyl alcohol, ethoxylated, phosphated, potassium salt	68070-99-5	>= 1 - < 3
4,6-dichloro-2-trichloromethyl pyridine	1129-19-7	>= 1 - < 3
Propylene glycol	57-55-6	>= 1 - < 3
Polyoxyethylene octyl ether phosphate potassium salt	73018-34-5	>= 1 - < 3
2,3,4,5,6-Pentachloropyridine	2176-62-7	>= 0.3 - < 1
3-Chloro-6-(trichloromethyl)pyridine	1197-03-1	>= 0.1 - < 0.3
Balance	Not Assigned	> 40

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Move person to fresh air; if effects occur, consult a physician.

In case of skin contact : Wash off with plenty of water.

In case of eye contact : Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

If swallowed : No emergency medical treatment necessary.

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 personal protective equipment.

Notes to physician : No specific antidote.
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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 firefighting 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:
Nitrogen oxides (NOx)
Carbon oxides

Specific extinguishing meth- : Remove undamaged containers from fire area if it is safe to do

ods		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

Personal precautions, protective equipment and emergency procedures	:	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 absorbant. 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 overpressurization 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	:	To avoid spills during handling keep bottle on a metal tray. 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. 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. Do not get in eyes. Avoid contact with skin and 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
nitrapyrin (ISO)	1929-82-4	TWA (Inhalable fraction and vapor)	10 mg/m3	ACGIH
		STEL (Inhalable fraction and vapor)	20 mg/m3	ACGIH
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	100 mg/m3	Corteva OEL
		STEL	300 mg/m3	Corteva OEL
		TWA	200 mg/m3 (total hydrocarbon	ACGIH

			vapor)	
Sodium chloride	7647-14-5	TWA	10 mg/m3	Dow IHG
Propylene glycol	57-55-6	TWA	10 mg/m3	US WEEL
2,3,4,5,6-Pentachloropyridine	2176-62-7	TWA	7 mg/m3	Dow IHG

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 when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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 : Wear clean, body-covering clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid.

Color : off-white

Odor : Gasoline-like

Odor Threshold : No data available

pH : 8.54 (71.1 °F / 21.7 °C)

Melting point/range	:	Not applicable
Freezing point		No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 212 °F / > 100 °C Method: closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data 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
Density	:	1.196 g/cm3 (68 °F / 20 °C)
Solubility(ies) Water solubility	: :	 No data available
Autoignition temperature	:	No data available
Viscosity Viscosity, dynamic	: :	 No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	No
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

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 Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute oral toxicity Remarks: For similar material(s):
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.65 mg/l Exposure time: 4 h Test atmosphere: dust/mist Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute inhalation toxicity Remarks: For similar material(s):
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2,000 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute dermal toxicity Remarks: For similar material(s):

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 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
Remarks: For similar material(s):

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.
May cause central nervous system effects.
Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.
Signs and symptoms of excessive exposure may include:
Sweating.
Nausea and/or vomiting.

LC50 (Rat): > 5.28 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: For similar material(s):

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

Sodium chloride:

Acute oral toxicity : LD50 (Rat): > 3,550 mg/kg
Remarks: Excessive exposure may cause:
Nausea and/or vomiting.

Acute inhalation toxicity : LC50 (Rat): > 42 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 10,000 mg/kg

4,6-dichloro-2-trichloromethyl pyridine:

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

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

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

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

3-Chloro-6-(trichloromethyl)pyridine:

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

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

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

Skin corrosion/irritation

Product:

Species : Rabbit
Result : No skin irritation

Components:

nitrapyrin (ISO):

Species : Rabbit
Result : No skin irritation

Sodium chloride:

Species : Rabbit
Result : No skin irritation

Decyl alcohol, ethoxylated, phosphated, potassium salt:

Result : Skin irritation

4,6-dichloro-2-trichloromethyl pyridine:

Result : Skin irritation

Propylene glycol:

Species : Rabbit
Result : No skin irritation

Polyoxyethylene octyl ether phosphate potassium salt:

Result : Skin irritation

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

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : No eye irritation

Components:

nitrapyrin (ISO):

Species : Rabbit
Result : Eye irritation

Sodium chloride:

Species : Rabbit
Result : No eye irritation

Decyl alcohol, ethoxylated, phosphated, potassium salt:

Result : Corrosive

4,6-dichloro-2-trichloromethyl pyridine:

Result : Eye irritation

Propylene glycol:

Species : Rabbit
Result : No eye irritation

Polyoxyethylene octyl ether phosphate potassium salt:

Result : Corrosive

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

Species : Rabbit
Result : No eye irritation

3-Chloro-6-(trichloromethyl)pyridine:

Result : Eye irritation

Respiratory or skin sensitization

Product:

Species : Guinea pig
Result : Does not cause skin sensitization.
Remarks : For similar material(s):

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 guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

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.

Propylene glycol:

Species : human
Assessment : Does not cause skin sensitization.

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

Assessment : May cause sensitization by skin contact.

3-Chloro-6-(trichloromethyl)pyridine:

Assessment : May cause sensitization by skin contact.
Remarks : Has caused allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

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 : For similar material(s):, In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

Sodium chloride:

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

Propylene glycol:

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

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

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

3-Chloro-6-(trichloromethyl)pyridine:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were 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 : Contains naphthalene which has caused cancer in some laboratory animals., However, the relevance of this to humans is unknown.

Propylene glycol:

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

3-Chloro-6-(trichloromethyl)pyridine:

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.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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 No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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 : In animal studies, did not interfere with reproduction.
For similar material(s):, 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.

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.

3-Chloro-6-(trichloromethyl)pyridine:

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.

STOT-single exposure

Product:

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

Components:

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

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

Sodium chloride:

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

Decyl alcohol, ethoxylated, phosphated, potassium salt:

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.

Propylene glycol:

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

Polyoxyethylene octyl ether phosphate potassium salt:

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

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

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

3-Chloro-6-(trichloromethyl)pyridine:

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

STOT-repeated exposure

Product:

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

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

Sodium chloride:

Remarks : Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

Decyl alcohol, ethoxylated, phosphated, potassium salt:

Remarks : No relevant data found.

4,6-dichloro-2-trichloromethyl pyridine:

Remarks : No relevant data found.

Propylene glycol:

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

Polyoxyethylene octyl ether phosphate potassium salt:

Remarks : No relevant data found.

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

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

3-Chloro-6-(trichloromethyl)pyridine:

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.

Aspiration toxicity

Product:

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

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.

Sodium chloride:

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

Decyl alcohol, ethoxylated, phosphated, potassium salt:
Based on available information, aspiration hazard could not be determined.

4,6-dichloro-2-trichloromethyl pyridine:
Based on available information, aspiration hazard could not be determined.

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

Polyoxyethylene octyl ether phosphate potassium salt:
Based on available information, aspiration hazard could not be determined.

2,3,4,5,6-Pentachloropyridine:
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
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: For similar material(s):
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).

EC50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l
Exposure time: 96 h

LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.1 mg/l
Exposure time: 48 h
Test Type: semi-static test
Remarks: For similar material(s):

EL50 (Daphnia magna (Water flea)): 1.4 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 7.9 mg/l
Exposure time: 72 h
Remarks: For similar material(s):

EL50 (Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 72 h

Test Type: static test
Method: OECD Test Guideline 201

Ecotoxicology Assessment

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

Sodium chloride:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 5,840 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Pimephales promelas (fathead minnow)): 10,610 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,900 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Other): 2,430 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 120 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : IC50 (activated sludge): > 1,000 mg/l
Method: OECD 209 Test

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

2,3,4,5,6-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.

3-Chloro-6-(trichloromethyl)pyridine:

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).

(Bluegill sunfish (Lepomis macrochirus)): 3.4 - 7.9 mg/l
Exposure time: 96 h
Test Type: Static
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : 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

Toxicity to fish (Chronic toxicity) : (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 : oral LD50 (Anas platyrhynchos (Mallard duck)): 2,708 mg/kg
Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

dietary LC50 (Anas platyrhynchos (Mallard duck)): 1466 mg/kg diet.
Remarks: Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

dietary LC50 (Coturnix japonica (Japanese quail)): 820 ppm

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 : Result: Not biodegradable.
Remarks: For similar material(s):
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: 58.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

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
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.

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

ThOD : 0.64 kg/kg

3-Chloro-6-(trichloromethyl)pyridine:

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 mg/g

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

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

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

Bioaccumulative potential

Components:

nitrapyrin (ISO):

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:

Partition coefficient: n-octanol/water : Remarks: For similar material(s):
Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Sodium chloride:

Partition coefficient: n- : Remarks: No bioconcentration is expected because of the

octanol/water | relatively high water solubility.
Partitioning from water to n-octanol is not applicable.

4,6-dichloro-2-trichloromethyl pyridine:

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

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).

2,3,4,5,6-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).

3-Chloro-6-(trichloromethyl)pyridine:

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

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
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.

Sodium chloride:

Distribution among environmental compartments : Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

4,6-dichloro-2-trichloromethyl pyridine:

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

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).

Balance:

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

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 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.

Sodium chloride:

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 : Regulation: (Update: 12/17/2010; RT)
Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Decyl alcohol, ethoxylated, phosphated, potassium salt:

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:

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.

Polyoxyethylene octyl ether phosphate potassium salt:

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.

3-Chloro-6-(trichloromethyl)pyridine:

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).

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 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. (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. (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. (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
Not regulated as a dangerous good

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 : No SARA Hazards

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

nitrapyrin (ISO)	1929-82-4	>= 20 - < 30 %

US State Regulations

Pennsylvania Right To Know

nitrapyrin (ISO)	1929-82-4
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5
Propylene glycol	57-55-6

California Prop. 65

WARNING: This product can expose you to chemicals including nitrapyrin (ISO), naphthalene, which is/are known to the State of California to cause cancer, and
nitrapyrin (ISO), 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.

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 : 62719-741

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

Harmful if swallowed or absorbed through the skin

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 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
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / TWA	:	Time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

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; 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 : 03/02/2022

Product code: GF-4364

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.

US / EN