

SAFETY DATA SHEET



Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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 : Starane® NXT

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 : End use herbicide product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2A

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

Skin sensitization : Sub-category 1A
Carcinogenicity : Category 2
Reproductive toxicity : Category 2
Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)
Aspiration hazard : Category 1

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H302 + H332 Harmful if swallowed or if inhaled.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
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

Components

Chemical name	CAS-No.	Concentration (% w/w)
bromoxynil octanoate (ISO)	1689-99-2	37.29
fluroxypyr-meptyl (ISO)	81406-37-3	9.23
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified	64742-95-6	>= 40 - < 50
1,2,4-trimethylbenzene	95-63-6	>= 10 - < 20
Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts	68953-96-8	>= 1 - < 3
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 1 - < 3
cumene	98-82-8	>= 0.3 - < 1
naphthalene	91-20-3	>= 0.1 - < 0.3

Actual concentration is withheld as a trade secret

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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.
If breathing is difficult, oxygen should be administered by qualified personnel.
- 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.
Suitable emergency safety shower facility should be available in work area.
- 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.
Suitable emergency eye wash facility should be immediately available.
- 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 personal protective equipment.
- Notes to physician : Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help.
Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done.
Probable mucosal damage may contraindicate the use of gastric lavage.
The decision of whether to induce vomiting or not should be made by a physician.
No specific antidote.

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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. Repeated excessive exposure may aggravate preexisting lung disease.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : Do not use direct water stream.
High volume water jet
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health. Vapors may form explosive mixtures with air. Do not allow run-off from fire fighting to enter drains or water courses.
Flash back possible over considerable distance.
- 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 (NO_x)
Carbon oxides
- 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 : Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.
Do not use a solid water stream as it may scatter and spread fire.
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

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Remove all sources of ignition.
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, undwater. 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.
Wipe up with absorbent material (e.g. cloth, fleece).
Non-sparking tools should be used.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Suppress (knock down) gases/vapors/mists with a water spray jet.
See Section 13, Disposal Considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

- Local/Total ventilation : Use with local exhaust ventilation.
Use only in an area equipped with explosion proof exhaust ventilation.
- 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.

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

Non-sparking tools should be used.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
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.
Do not breathe vapors or spray mist.
Do not swallow.
Do not get in eyes.
Avoid contact with skin and eyes.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
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.
No smoking.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in properly labeled containers.
Keep tightly closed.
Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents
Organic peroxides
Flammable solids
Pyrophoric liquids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases

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), light arom.; Low boiling point naphtha -unspecified	64742-95-6	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	200 mg/m ³	ACGIH

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
 Date of first issue: 03/22/2022

			(total hydrocarbon vapor)	
		TWA	400 ppm 1,600 mg/m3	OSHA P0
1,2,4-trimethylbenzene	95-63-6	TWA	25 ppm	ACGIH
		TWA	25 ppm 125 mg/m3	OSHA P0
fluroxypyr-meptyl (ISO)	81406-37-3	TWA	10 mg/m3	Dow IHG
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 vapor)	ACGIH
cumene	98-82-8	TWA	5 ppm	ACGIH
		TWA	50 ppm 245 mg/m3	OSHA Z-1
		TWA	50 ppm 245 mg/m3	OSHA P0
naphthalene	91-20-3	TWA	10 ppm	Dow IHG
		STEL	15 ppm	Dow IHG
		TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m3	OSHA Z-1
		TWA	10 ppm 50 mg/m3	OSHA P0
		STEL	15 ppm 75 mg/m3	OSHA P0

Engineering measures : Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.
 If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.
 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, use an approved respirator.
 Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.
 For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Exam-

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

ples of acceptable glove barrier materials include: Butyl rubber. 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 chemical goggles.
- 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

- Appearance : Liquid.
- Color : Yellow to brown
- Odor : Mild
- Odor Threshold : No data available
- pH : No data available
- Melting point/range : Not applicable
- Freezing point : No data available
- Boiling point/boiling range : No data available
- Flash point : 125.4 °F / 51.9 °C
Method: Tag Closed Cup ASTM D56, 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

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.093 g/cm³
Method: NAPM 2A.00

Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : No data available.

Autoignition temperature : No data available

Viscosity
Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

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.
Vapors may form explosive mixture with air.
May form explosive dust-air mixture.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : None.

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:
Nitrogen oxides (NO_x)
Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): 310.2 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.33 mg/l

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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

Components:**bromoxynil octanoate (ISO):**

Acute oral toxicity : LD50 (Rat): 238 mg/kg
 Assessment: The component/mixture is moderately toxic after single ingestion.

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

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

fluroxypyr-meptyl (ISO):

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 1.16 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: Maximum attainable concentration.

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

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

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): 3,492 mg/kg

Acute inhalation toxicity : Remarks: Mist may cause irritation of upper respiratory tract (nose and throat).
 May cause dizziness and drowsiness.

LC50 (Rat): 6.193 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Assessment: The substance or mixture has no acute inhalation toxicity

Remarks: Maximum attainable concentration.

Acute dermal toxicity : Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50 (Rabbit): > 3,160 mg/kg

1,2,4-trimethylbenzene:

Acute oral toxicity : LD50 (Rat): > 3,400 mg/kg

Acute inhalation toxicity : Remarks: Prolonged excessive exposure may cause serious adverse effects, even death.
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.

LC50 (Rat): 18 mg/l

Exposure time: 4 h

Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD 401 or equivalent
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute oral toxicity
Remarks: For similar material(s):

Acute dermal toxicity : LD50 (Rat, male and female): > 1,000 - < 1,600 mg/kg
Method: OECD 402 or equivalent
Remarks: For similar material(s):

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

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

Acute inhalation toxicity : 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 satu-

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

rated atmosphere.

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

cumene:

Acute oral toxicity : LD50 (Rat): 2,260 mg/kg
Remarks: Contact with the tongue may produce a burning sensation and excess salivation.

Acute inhalation toxicity : LC50 (Rat): > 17.6 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 3,160 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.

Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

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

Skin corrosion/irritation**Product:**

Species : Rabbit
Result : Skin irritation

Components:**fluroxypyr-meptyl (ISO):**

Species : Rabbit
Result : No skin irritation

1,2,4-trimethylbenzene:

Result : Skin irritation

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Result : Skin irritation

cumene:

Result : No skin irritation

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

Species : Rabbit
Result : Eye irritation

Components:**1,2,4-trimethylbenzene:**

Result : Eye irritation

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Result : Corrosive

cumene:

Result : No eye irritation

Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

Respiratory or skin sensitization**Product:**

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

Components:**bromoxynil octanoate (ISO):**

Result : May cause sensitization by skin contact.

fluroxypyr-meptyl (ISO):

Species : Guinea pig
Assessment : Does not cause skin sensitization.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Remarks : For skin sensitization:
Did not cause sensitization on laboratory animals.

Remarks : For respiratory sensitization:
No relevant data found.

1,2,4-trimethylbenzene:

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

Remarks : For respiratory sensitization:
No relevant data found.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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

Remarks : For respiratory sensitization:
No relevant data found.

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

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

Remarks : For respiratory sensitization:
No relevant data found.

cumene:

Remarks : For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Remarks : For respiratory sensitization:
No relevant data found.

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.

Germ cell mutagenicity**Components:****fluroxypyr-meptyl (ISO):**

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

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Germ cell mutagenicity - Assessment : Did not show mutagenic effects in animal experiments.

1,2,4-trimethylbenzene:

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

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Germ cell mutagenicity - Assessment : For similar material(s);, 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.

cumene:

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

naphthalene:

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

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Carcinogenicity**Components:****fluroxypyr-meptyl (ISO):**

Carcinogenicity - Assessment : For similar active ingredient(s), Fluroxypyr., Did not cause cancer in laboratory animals.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Has caused cancer in laboratory animals., However, the relevance of this to humans is unknown.

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

Carcinogenicity - Assessment : 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.

cumene:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Has caused cancer in laboratory animals., However, the relevance of this to humans is unknown.

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.

IARC	Group 2B: Possibly carcinogenic to humans	
	cumene	98-82-8
	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	
	cumene	98-82-8
	Reasonably anticipated to be a human carcinogen	
	naphthalene	91-20-3

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Reproductive toxicity**Components:****bromoxynil octanoate (ISO):**

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

fluroxypyr-meptyl (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., Did not cause birth defects in laboratory animals.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.

1,2,4-trimethylbenzene:

Reproductive toxicity - Assessment : For similar material(s); In animal studies, did not interfere with reproduction. Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Reproductive toxicity - Assessment : For similar material(s); 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.

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

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

cumene:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

naphthalene:

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

Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

STOT-single exposure**Components:****Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Routes of exposure : inhalation (dust/mist/fume)
Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

1,2,4-trimethylbenzene:

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

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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

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

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

cumene:

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

naphthalene:

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

STOT-repeated exposure**Components:****Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity**Components:****fluroxypyr-meptyl (ISO):**

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

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

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

Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

1,2,4-trimethylbenzene:

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

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Remarks : For similar material(s):
In animals, effects have been reported on the following organs:
Kidney.

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.

cumene:

Remarks : Cataracts were observed in rats exposed to cumene vapors.

naphthalene:

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

Aspiration toxicity**Components:****fluroxypyr-meptyl (ISO):**

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

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

May be fatal if swallowed and enters airways.

1,2,4-trimethylbenzene:

May be harmful if swallowed and enters airways.

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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.

cumene:

May be fatal if swallowed and enters airways.

naphthalene:

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

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.1 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.11 mg/l
aquatic invertebrates : Exposure time: 48 h

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapita): 0.21 mg/l
plants : Exposure time: 72 h

fluroxypyr-meptyl (ISO):

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

LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.225 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 0.183 mg/l
aquatic invertebrates : Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic : ErC50 (diatom Navicula sp.): 0.24 mg/l
plants : Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

EbC50 (alga Scenedesmus sp.): > 0.47 mg/l

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Exposure time: 72 h

ErC50 (Selenastrum capricornutum (green algae)): > 1.410 mg/l

Exposure time: 96 h

ErC50 (Myriophyllum spicatum): 0.075 mg/l

Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.031 mg/l

Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Rainbow trout (Oncorhynchus mykiss)): 0.32 mg/l

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg

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

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2000 mg/kg bodyweight.

Exposure time: 5 d

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5000 mg/kg diet.

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

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

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9.2 mg/l
Exposure time: 96 h
Remarks: For similar material(s):

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 3.2 mg/l
Exposure time: 48 h
Remarks: For similar material(s):

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 2.9 mg/l
 Exposure time: 72 h
 Remarks: For similar material(s):

NOEC (Pseudokirchneriella subcapitata (green algae)): 1 mg/l
 Exposure time: 72 h
 Remarks: For similar material(s):

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

1,2,4-trimethylbenzene:

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)): 7.7 mg/l
 Exposure time: 96 h
 Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.6 mg/l
 Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 2.356 mg/l
 Exposure time: 96 h

Ecotoxicology Assessment

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

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Toxicity to fish : Remarks: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50 (zebra fish (Brachydanio rerio)): 31.6 mg/l
 Exposure time: 96 h
 Remarks: For similar material(s):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 62 mg/l
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 29 mg/l
 End point: Growth rate inhibition
 Exposure time: 96 h
 Remarks: For similar material(s):

Toxicity to fish (Chronic toxicity) : NOEC (Rainbow trout (Salmo gairdneri)): 0.23 mg/l
 End point: survival

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Exposure time: 72 d
Remarks: For similar material(s):

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.18 mg/l
End point: number of offspring
Exposure time: 21 d
Remarks: For similar material(s):

Toxicity to microorganisms : EC50 (activated sludge): 550 mg/l
End point: Respiration rates.
Exposure time: 3 h
Remarks: For similar material(s):

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

Toxicity to fish : Remarks: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50 (Gambusia affinis (Mosquito fish)): 811 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants : EC50 (Algae): 21 - 165 mg/l
Exposure time: 72 h

cumene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.7 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4.0 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (green algae)): 2.6 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.35 mg/l
End point: number of offspring
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211 or Equivalent

Toxicity to terrestrial organisms : oral LD50 (redwing blackbird (Agelaius phoeniceus)): > 98 mg/kg

naphthalene:

Toxicity to fish : Remarks: Material is highly toxic to aquatic organisms on an

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

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.

Persistence and degradability**Components:****fluroxypyr-meptyl (ISO):**

Biodegradability : Result: Not biodegradable
Remarks: Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 32 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Fail

ThOD : 2.2 kg/kg

Stability in water : Test Type: Hydrolysis
Degradation half life (half-life): 454 d

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Biodegradability : Biodegradation: 78 %
Exposure time: 28 d
Remarks: Material is expected to be readily biodegradable.

1,2,4-trimethylbenzene:

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

Biodegradability : Result: Readily biodegradable.
Remarks: Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Biodegradation: 100 %
Exposure time: 1 d

ThOD : 3.19 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Rate constant: 1.670E-11 cm³/s
Method: Estimated.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Biodegradability : Biodegradation: 2.9 %
Exposure time: 28 d
Method: OECD Test Guideline 301E or Equivalent
Remarks: 10-day Window: Fail

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

Biodegradability : Result: Not biodegradable
Remarks: Material is not readily biodegradable according to OECD/EEC guidelines.

cumene:

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

Biodegradation: 70 %
Exposure time: 20 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Pass

Biochemical Oxygen Demand (BOD) : 40%
Incubation time: 5 d

62%
Incubation time: 10 d

70%
Incubation time: 20 d

ThOD : 3.20 kg/kg
Method: Estimated.

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Concentration: 1,500,000 1/cm³
Rate constant: 6.90E-12 cm³/s
Method: Estimated.

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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.

Bioaccumulative potential**Components:****fluroxypyr-meptyl (ISO):**

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 26
Method: Measured

Partition coefficient: n-octanol/water :

log Pow: 5.04
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

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

1,2,4-trimethylbenzene:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 33 - 275
Exposure time: 56 d
Concentration: 0.2 mg/l
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.63
Method: Measured
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Partition coefficient: n-octanol/water : log Pow: 4.6
Method: OECD Test Guideline 107 or Equivalent
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).

cumene:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 35.5
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.4 - 3.7
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

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).

Mobility in soil**Components:****fluroxypyr-meptyl (ISO):**

Distribution among environmental compartments : Koc: 6200 - 43000
Remarks: Expected to be relatively immobile in soil (Koc > 5000).

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

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

1,2,4-trimethylbenzene:

Distribution among environmental compartments : Koc: 720
Method: Estimated.
Remarks: Potential for mobility in soil is low (Koc between 500

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

and 2000).

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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

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

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

cumene:

Distribution among environmental compartments : Koc: 800 - 2800
Method: Estimated.
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

naphthalene:

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

Other adverse effects

Components:

fluroxypyr-meptyl (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.

1,2,4-trimethylbenzene:

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.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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.

Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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.

cumene:

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.

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.

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 2903
Proper shipping name	: PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. (Bromoxynil octanoate, Xylene)
Class	: 6.1
Subsidiary risk	: 3
Packing group	: III
Labels	: 6.1 (3)

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

IATA-DGR

UN/ID No. : UN 2903
Proper shipping name : Pesticide, liquid, toxic, flammable, n.o.s.
(Bromoxynil octanoate, Xylene)
Class : 6.1
Subsidiary risk : 3
Packing group : III
Labels : Toxic, Flammable Liquids
Packing instruction (cargo aircraft) : 663
Packing instruction (passenger aircraft) : 655

IMDG-Code

UN number : UN 2903
Proper shipping name : PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S.
(Bromoxynil octanoate, Xylene, Fluroxypyr 1-methylheptyl ester)
Class : 6.1
Subsidiary risk : 3
Packing group : III
Labels : 6.1 (3)
EmS Code : F-E, S-D
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 2903
Proper shipping name : Pesticides, liquid, toxic, flammable, n.o.s.
(Bromoxynil octanoate, Xylene)
Class : 6.1
Subsidiary risk : 3
Packing group : III
Labels : TOXIC, FLAMMABLE LIQUID
ERG Code : 131
Marine pollutant : no
Reportable Quantity : Xylene only regulated in pack sizes > 4,822 kg

Further information

THE ABOVE INFORMATION ONLY APPLIES TO PACKAGE SIZES WHERE THE HAZARDOUS SUBSTANCE MEETS THE REPORTABLE QUANTITY.

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

SAFETY DATA SHEET



Starane® NXT

Version 1.2 Revision Date: 07/11/2022 SDS Number: 800080004967 Date of last issue: 03/22/2022
Date of first issue: 03/22/2022

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Respiratory or skin sensitization
Carcinogenicity
Reproductive toxicity
Aspiration hazard
Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

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

bromoxynil octanoate (ISO)	1689-99-2	>= 30 - < 50 %
1,2,4-trimethylbenzene	95-63-6	>= 10 - < 20 %
cumene	98-82-8	>= 0.1 - < 1 %
naphthalene	91-20-3	>= 0.1 - < 1 %

US State Regulations

Pennsylvania Right To Know

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6
1,2,4-trimethylbenzene	95-63-6
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5

California Prop. 65

WARNING: This product can expose you to chemicals including cumene, naphthalene, which is/are known to the State of California to cause cancer, and bromoxynil octanoate (ISO), N-methyl-2-pyrrolidone, 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 : 62719-557

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

SAFETY DATA SHEET



Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

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:

WARNING

May be fatal if swallowed.
Causes substantial but temporary eye injury
Harmful if inhaled
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
ACGIH / TWA	:	8-hour, time-weighted average
Corteva OEL / STEL	:	Short term exposure limit
Corteva OEL / TWA	:	Time weighted average
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 Z-1 / TWA	:	8-hour time weighted average

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 Admin-

SAFETY DATA SHEET



Starane® NXT

Version	Revision Date:	SDS Number:	Date of last issue: 03/22/2022
1.2	07/11/2022	800080004967	Date of first issue: 03/22/2022

istration; 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; TECI - 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 : 07/11/2022

Product code: GF-1682

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