SAFETY DATA SHEET
according to the OSHA Hazard Communication Standard

BIOBAN™ QK 20 Antimicrobial

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/24/2025	203000022137	Country / Language: US / EN

SECTION 1. IDENTIFICATION

Product name : BIOBAN™ QK 20 Antimicrobial

Product code : 000000000062634693

EPA registration number : 464-628

Manufacturer or supplier's details

Company : LANXESS Corporation
Product Safety & Regulatory Affairs
111 RIDC Park West Drive
Pittsburgh, Pennsylvania 15275-1112

Responsible Department : (800) LANXESS
(412) 809-1000
lanxesshes@lanxess.com

Emergency telephone : CHEMTREC (800) 424-9300 or
(703) 527-3887 (Outside U.S.A) and mention CCN12916.
Lanxess Emergency Phone (800) 410-3063.

Recommended use of the chemical and restrictions on use

Recommended use : Biocide for industrial application

SECTION 2. HAZARDS IDENTIFICATION

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

Hazards for the product as supplied

Corrosive to Metals : Category 1

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Skin sensitization : Category 1

Other hazards

None known.

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :
H290 May be corrosive to metals.
H302 + H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

Precautionary Statements :

Prevention:

P234 Keep only in original packaging.
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/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
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 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P390 Absorb spillage to prevent material damage.

Storage:

P406 Store in a corrosion resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)
2,2-Dibromo-3-nitrilopropionamide - DBNPA	10222-01-2*	>= 10 - <= 30
Acetamide, 2-bromo-2-cyano-	1113-55-9*	>= 0.1 - <= 1

* Indicates that the identifier is a CAS No.
Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Consult a physician.
Move out of dangerous area.
Do not leave the victim unattended.
Show this safety data sheet to the doctor in attendance.

If inhaled : Get medical attention immediately.
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If unconscious, place in recovery position and get medical attention immediately.
Maintain open airway.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

In case of skin contact : Wash off with soap and water.
Remove contaminated clothing and shoes.
Continue to rinse for at least 20 minutes.
Get medical attention if symptoms occur.
Wash contaminated clothing before reuse.

In case of eye contact : Get medical attention immediately.
In case of contact, flush eyes with plenty of water for at least 30 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated.
Remove contact lenses, if present and easy to do. Continue rinsing.
Chemical burns must be treated promptly by a physician.

If swallowed : Rinse mouth with water.
Do not induce vomiting unless directed to do by medical personnel.
If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
If unconscious, place in recovery position and get medical attention immediately.
Never give anything by mouth to an unconscious person.
Maintain open airway.

Most important symptoms and effects, both acute and delayed

Symptoms : Acute overexposure to this product may cause dizziness, headache, drowsiness, malaise, abdominal pain.
Eye: Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
Skin: Causes irritation with symptoms of reddening, itching, and swelling.
Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Effects : Harmful if swallowed or if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.

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 : Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist.
If burn is present, treat as any thermal burn, after decontamination.
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.
There is no specific antidote available.
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.
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water fog or fine spray.
Dry chemical fire extinguishers.
General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.
Carbon dioxide.
Foam

Unsuitable extinguishing media	:	Do not use direct water stream. May spread fire.
Specific hazards during fire fighting	:	This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Carbon dioxide (CO2) Carbon monoxide Nitrogen oxides (NOx) Halogenated compounds
Further information	:	Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. If product becomes contaminated with water, monitor product for heat generation and/or decomposition. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move containers from fire if this can be done without risk. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.
Special protective equipment for fire-fighters	:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Evacuate area. Keep upwind of spill. Refer to section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Ventilate area of leak or spill. Use appropriate safety equipment. For personal protection see section 8.
Environmental precautions	:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
Methods and materials for containment and cleaning up	:	For disposal considerations see section 13. Collect in suitable and properly labeled containers. Contain spilled material if possible. Absorb with materials such as: Hazorb®. Zorb-all®. Vermiculite Sand. Dirt Neutralize with approximately 17.2 grams sodium bisulfite (NaHSO3) or 15.7 grams sodium meta bisulphite (Na2S2O5) for every 100 grams biocidal product. Sodium metabisulfite. Sodium bisulphite.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Keep out of reach of children. Avoid prolonged or repeated contact with skin. Do not swallow. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Keep container closed. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. Avoid breathing mist. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Conditions for safe storage	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container closed when not in use.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Do not store in unlabeled containers.
Use appropriate container to avoid environmental contamination.
Empty containers retain residue and can be dangerous.
Do not reuse container.
Store in corrosive resistant polyethylene container with a resistant inner liner.
Do not store in unlined carbon steel containers as this product will corrode carbon steel and other metals, causing the generation of hydrogen gas (flammable). Carbon steel or metal containers must have a complete polyethylene liner on sides, top and bottom. Stainless steel (316 SS) tanks and containers are corrosion-resistant and may be used with this product, even when unlined. Repack only into approved containers.

Recommended storage temperature : <= 95 °F / <= 35 °C

Further information on storage stability : Stable under recommended storage conditions.

Packaging material : Unsuitable material: Do not store in or use iron or steel containers.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2,2-Dibromo-3-nitrilopropionamide - DBNPA	10222-01-2	TWA	5 mg/m3 (Cyanide)	OSHA Z-1
		C	5 mg/m3 (Cyanide)	ACGIH

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.
In misty atmospheres, use an approved particulate respirator.

Hand protection

Remarks	:	Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: butyl-rubber Polyethylene Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Neoprene Polyvinyl chloride - PVC Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Eye protection	:	Safety glasses
Skin and body protection	:	Complete suit protecting against chemicals Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Physical state	:	liquid
Color	:	Colorless to brown
Odor	:	Odorless to mild
Odor Threshold	:	No test data available
pH	:	1.5 - 5.0 Method: Literature Data

Melting point/ range	:	Not applicable
Freezing point		< -58 °F / < -50 °C
Boiling point/boiling range	:	> 158 °F / > 70 °C Decomposition
Flash point	:	>= 360 °F / 182 °C Method: open cup Cleveland open cup
Evaporation rate	:	No test data available
Flammability (solid, gas)	:	Not applicable to liquids
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No test data available
Lower explosion limit / Lower flammability limit	:	No test data available
Vapor pressure	:	18.9 mmHg (77 °F / 25 °C) Method: estimated
Relative vapor density	:	No test data available
Relative density	:	1.2 - 1.3 (68 °F / 20 °C)
Density	:	1.23 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	75 g/l (68 °F / 20 °C)
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Ignition temperature	:	No test data available
Decomposition temperature	:	No test data available
Viscosity		
Viscosity, dynamic	:	20 cps (77 °F / 25 °C) (Brookfield Viscosity - @ 100 rpm, #0 spindle)
Viscosity, kinematic	:	16 cSt (77 °F / 25 °C) Method: Calculated.

Explosive properties	:	No test data available
Oxidizing properties	:	No test data available
Surface tension	:	No data available
Molecular weight	:	No test data available
Metal corrosion rate	:	Corrosive to metals
Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Temperature > 70 °C Avoid temperatures above
Incompatible materials	:	Avoid contact with: Oxidizers. Strong bases Avoid contact with metals such as: Aluminum alloys.
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 dioxide. Bromine Cyanogen bromide. Dibromoacetonitrile.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Ingestion
Eye contact
Skin contact

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity	:	Remarks: Low toxicity if swallowed. Ingestion: May cause burns to mouth, throat, and stomach. May cause drowsiness or dizziness. LD50 (Rat): 510 mg/kg
Acute inhalation toxicity	:	Remarks: Mist may cause irritation of upper respiratory tract (nose and throat). LC50 (Rat, female): 1.25 mg/l Exposure time: 4 h Test atmosphere: dust/mist LC50 (Rat, male): 1.40 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: Not corrosive to the respiratory tract.
Acute dermal toxicity	:	Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts. LD50 (Rabbit): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Acute oral toxicity	:	LD50 (Rat, female): 167 mg/kg Method: OECD Test Guideline 401 GLP: Yes LD50 (Rat, male): 224 mg/kg Method: OECD Test Guideline 401 GLP: Yes LD50 (Guinea pig, female): 118 mg/kg LD50 (Rabbit, male and female): 118 mg/kg

Acute inhalation toxicity	:	LC50 (Rat, female): 0.24 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 GLP: Yes LC50 (Rat, male): 0.31 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 GLP: Yes
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: Yes Assessment: The substance or mixture has no acute dermal toxicity Remarks: Dosage caused no mortality

Acetamide, 2-bromo-2-cyano-:

Acute oral toxicity	:	LD50 (Rat, female): 282 mg/kg
Acute inhalation toxicity	:	Remarks: The LC50 has not been determined.
Acute dermal toxicity	:	Remarks: The dermal LD50 has not been determined.

Skin corrosion/irritation

Causes skin irritation.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation
GLP	:	Yes

Acetamide, 2-bromo-2-cyano-:

Result	:	Skin irritation
Remarks	:	Brief contact may cause skin irritation with local redness. Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause pain disproportionate to the level of irritation to eye tissues.
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Species : Rabbit
Result : Irreversible effects on the eye
Method : OECD Test Guideline 405
GLP : No

Acetamide, 2-bromo-2-cyano-:

Result : Mild eye irritation
Remarks : May cause severe eye irritation.
May cause slight corneal injury.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified due to lack of data.

Product:

Assessment : May cause sensitization by skin contact.
Remarks : Has caused allergic skin reactions in humans.

Remarks : For respiratory sensitization:
No relevant information found.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Test Type : Buehler Test
Routes of exposure : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : May cause sensitization by skin contact.
GLP : No

Acetamide, 2-bromo-2-cyano-:

Remarks : For skin sensitization:
No relevant data found.

Remarks : For respiratory sensitization:
No relevant data found.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium, Escherichia coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: Yes

Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: Yes

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: Yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative
GLP: Yes

Carcinogenicity

Not classified due to lack of data.

Product:

Remarks : Active ingredient did not cause cancer in laboratory animals. There is evidence that dibromoacetonitrile (DBAN), a possible degradation product of 2,2-dibromo-3-nitrilopropionamide (DBNPA), can produce cancer in laboratory animals. However, the relevance of this to humans is unknown.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Species : Rat, male and female
Application Route : Oral
Exposure time : 2 Years

Method : OECD Test Guideline 453
Result : negative
GLP : Yes

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

Not classified due to lack of data.

Product:

Effects on fetal development : Remarks: For the active ingredient(s):
Has been toxic to the fetus in laboratory animals at doses toxic to the mother.
Did not cause birth defects in laboratory animals.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Dose: 0 - 5 - 15 - 30 mg/kg bw/day
General Toxicity Parent: NOAEL: 15 mg/kg bw/day
Fertility: NOAEL: >= 30 mg/kg bw/day
Early Embryonic Development: NOAEL: >= 30 mg/kg bw/day
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

STOT-single exposure

Based on available data, the classification criteria are not met.

Product:

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

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Acetamide, 2-bromo-2-cyano-:

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

STOT-repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Product:

Remarks	:	Excessive exposure may increase the blood and tissue levels of bromine. Observations in animals include kidney effects following repeated ingestion of active ingredient, but no evidence of systemic toxicity following repeated dermal exposure at maximum attainable doses

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Species	:	Mouse, male and female
NOAEL	:	45 mg/kg
LOAEL	:	137 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Number of exposures	:	Continuous
Dose	:	0-1,57-4,5-45-137-269-450 mg/kg bw/day
Remarks	:	Subchronic toxicity

Species	:	Rat, male and female
NOAEL	:	44 mg/kg
LOAEL	:	130 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Number of exposures	:	Continuous
Dose	:	0-1,17-4,3-44-130-251-392 mg/kg bw/day
Remarks	:	Subchronic toxicity

Species	:	Rat, male and female
NOAEL	:	1.4 mg/kg
LOAEL	:	9.6 mg/kg
Application Route	:	Oral
Exposure time	:	730 d
Dose	:	0 - 1,4 - 9,6 - 71,3 mg/kg bw/day
Method	:	OECD Test Guideline 453
GLP	:	Yes
Remarks	:	Chronic toxicity

Species	:	Dog, male and female
NOAEL	:	6.1 mg/kg
LOAEL	:	10.7 mg/kg
Application Route	:	Oral
Exposure time	:	90 d

Number of exposures	:	Continuous
Dose	:	0 - 6,1 - 10,7 - 18,3 mg/kg bw/day
Remarks	:	Subchronic toxicity

Species	:	Rat, male and female
NOAEL	:	0,51 mg/m³
LOAEL	:	5,4 mg/m³
Application Route	:	Inhalation
Exposure time	:	14 d
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	0 - 0,51 - 5,4 - 31 mg/m³
GLP	:	Yes
Remarks	:	Subacute toxicity

Species	:	Rat, male and female
NOAEL	:	309 mg/kg
LOAEL	:	1,031 mg/kg
Application Route	:	Dermal
Exposure time	:	90 d
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	0 - 103 - 309 - 1031 mg/kg bw/day
Remarks	:	Subchronic toxicity

Acetamide, 2-bromo-2-cyano-:

Remarks	:	No relevant data found.

Aspiration toxicity

Not classified due to lack of data.

Product:

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

Components:

Acetamide, 2-bromo-2-cyano-:

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

Further information

Product:

Remarks	:	No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

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

LC50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.5 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.5 mg/l
End point: Growth rate
Exposure time: 72 h

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 3.4 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: Yes
GLP: Yes
Remarks: salt water

Toxicity to daphnia and other aquatic invertebrates : LC50 (Mysidopsis bahia (opossum shrimp)): 0.72 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: Yes
GLP: Yes
Remarks: salt water

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.5 mg/l
End point: Growth rate
Exposure time: 72 h
Remarks: Fresh water

ErC50 (Desmodesmus subspicatus (green algae)): 2.3 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: Yes
Method: OECD Test Guideline 201
GLP: Yes
Remarks: Fresh water

NOEC (Desmodesmus subspicatus (green algae)): 0.36 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: Yes
Method: OECD Test Guideline 201
GLP: Yes

Remarks: Fresh water

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.47 mg/l
Exposure time: 85 d
Test Type: flow-through test
Analytical monitoring: Yes
Method: OPP 72-4
GLP: Yes
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.06 mg/l
End point: Reproduction
Exposure time: 21 d
Test Type: flow-through test
Analytical monitoring: Yes
Method: OECD Test Guideline 211
GLP: Yes

NOEC (Daphnia magna (Water flea)): 0.07 mg/l
End point: Reproduction
Exposure time: 21 d
Test Type: flow-through test
Method: OPP 72-4
GLP: Yes

NOEC (Daphnia magna (Water flea)): 0.54 mg/l
End point: Growth
Exposure time: 21 d
Test Type: flow-through test
Method: OPP 72-4
GLP: Yes

Toxicity to microorganisms : EC50 (activated sludge): 4.6 mg/l
End point: Respiration inhibition
Exposure time: 3 h
Analytical monitoring: No
Method: OECD Test Guideline 209
GLP: Yes

Toxicity to terrestrial organisms : LC50 (Colinus virginianus (Bobwhite quail)): > 10,000 ppm
Remarks: Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

LC50 (Anas platyrhynchos (Mallard duck)): > 10,000 ppm
Remarks: Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Acetamide, 2-bromo-2-cyano-:

Toxicity to fish : Remarks: No relevant data found.

Persistence and degradability

Product:

Biodegradability : Result: Readily biodegradable.
Remarks: Considered rapidly degradable in the environment.

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Biodegradability : Remarks: Abiotic degradation: The material is rapidly degradable by abiotic means.

Result: Not rapidly biodegradable
Biodegradation: 35 - 78 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: Yes
Remarks: 10-day Window: Fail

Stability in water : Degradation half life (DT50): 183 h (12 °C) pH: 7

Degradation half life (DT50): 5.6 h (12 °C) pH: 9

Acetamide, 2-bromo-2-cyano-:

Biodegradability : Remarks: No relevant data found.

Bioaccumulative potential

Components:

2,2-Dibromo-3-nitrilopropionamide - DBNPA:

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: 0.8 (68 °F / 20 °C)
pH: 7
Method: measured

Acetamide, 2-bromo-2-cyano-:

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

Mobility in soil

Components:

Acetamide, 2-bromo-2-cyano-:

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

Other adverse effects

Product:

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

RCRA - Resource Conservation and Recovery Authorization Act	:	When discarded in its purchased form, this product meets the criteria of corrosivity, and should be managed as a hazardous waste (EPA Hazardous Waste Number D002). (40 CFR 261.20-24)
Waste from residues	:	The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Empty containers retain product residue; observe all precautions for product. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Waste disposal should be in accordance with existing federal, state, provincial and/or local environmental controls.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 3265
Proper shipping name	:	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-3-NITRILOPROPIONAMIDE)
Class	:	8
Packing group	:	III
Labels	:	8
	:	
Packing instruction (cargo aircraft)	:	856: 60.00 L
Packing instruction (passenger aircraft)	:	852: 5.00 L
Environmentally hazardous	:	yes
		

IMDG-Code

UN number	:	UN 3265

UN proper shipping name	:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-3-NITRILOPROPIONAMIDE)
Class	:	8
Packing group	:	III
Labels	:	8
	:	
EmS Code	:	F-A, S-B
Marine pollutant	:	yes
		

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 3265
Proper shipping name	:	Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-3-NITRILOPROPIONAMIDE)
Class	:	8
Packing group	:	III
Labels	:	8
	:	
ERG Code	:	153
Marine pollutant	:	yes(2,2-DIBROMO-3-NITRILOPROPIONAMIDE)
		

Hazard and Handling Notes

Corrosive to metal.
Environmentally hazardous substance.
Irritating to skin.
Risk of serious damage to eyes
Keep away from acids and oxidizing agents
Keep away from foodstuffs, acids and alkalis
The U.S. DOT regulations in Appendix B to 49 CFR § 172.101, paragraph 4 permit this material to ship as marine pollutant.

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

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to Metals
Acute toxicity (any route of exposure)
Respiratory or skin sensitization
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3
water	7732-18-5
2,2-Dibromo-3-nitrilopropionamide - DBNPA	10222-01-2
dibromoacetonitrile	3252-43-5

California Prop. 65

This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

TSCA inventory

TSCA : This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

TSCA list

No substances are subject to a Significant New Use Rule.

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

FIFRA information

EPA registration number : 464-628

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:

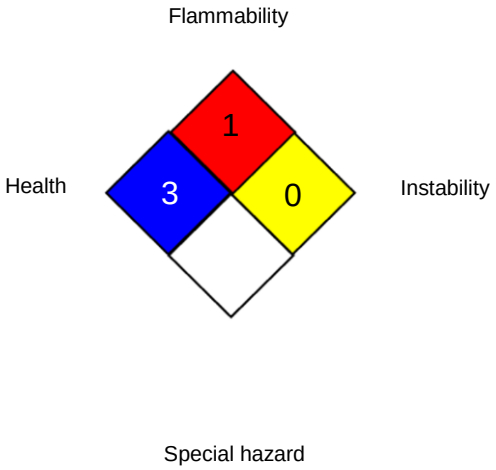
Signal Word : DANGER

Hazard Statements : Corrosive Causes irreversible eye damage. May be fatal if swallowed. Causes skin irritation. Harmful if inhaled. Harmful if absorbed through skin.

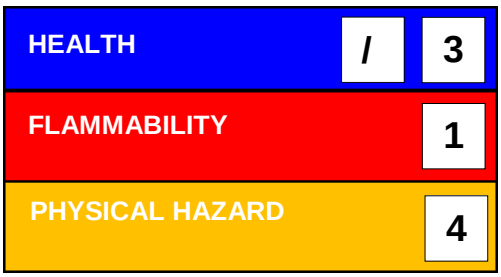
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / C	:	Ceiling 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 Standardization; 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 Organization 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, Authorization 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 : 09/24/2025

The data contained in this Safety Data Sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. 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 to be a guidance for processing and does not contain any 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. It is the responsibility of the recipient of the product to ensure that any proprietary rights and existing laws and legislation are observed.

Relevant changes from the previous version are marked on the left side of the Safety Data Sheet with a black double bar in appropriate places.

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