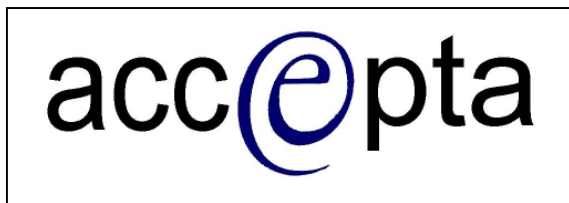


MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **ACCEPTA 2028**

APPLICATION : BIOCIDE

COMPANY IDENTIFICATION : Accepta Ltd
Statham House, Talbot Road
Old Trafford, Manchester, M32 0FP

Telephone 0161 877 2334
Fax 0870 135 6389

EMERGENCY TELEPHONE NUMBER(S) : 0161 877 2334

Date issued : 19.02.2008
Version Number : 4.0

2. HAZARDS IDENTIFICATION

HAZARD CLASSIFICATION :

This product is classified as dangerous in accordance with the Preparations Directive 1 999/45/EC.

Harmful by inhalation and if swallowed. Risk of serious damage to eyes. Irritating to skin. May cause sensitization by skin contact.

HUMAN HEALTH HAZARDS - ACUTE :

INHALATION :

Irritating, in high concentrations, to the eyes, nose, throat and lungs. Harmful if inhaled. Trace levels of cyanogen bromide and dibromoacetonitrile vapors may be present in unvented containers and may be irritating. Vapours and/or aerosols which may be formed at elevated temperatures or during agitation may cause systemic effects.

SKIN CONTACT :

May cause severe irritation or tissue damage depending on the length of exposure and the type of first aid administered. May cause sensitization by skin contact.

EYE CONTACT :

Corrosive. Will cause eye burns and permanent tissue damage.

INGESTION :

Not a likely route of exposure. Corrosive; causes chemical burns to the mouth, throat and stomach. Harmful if swallowed.

**MATERIAL SAFETY DATA SHEET**

PRODUCT

ACCEPTA 2028**EMERGENCY TELEPHONE NUMBER(S)**

See section 16, for Emergency Telephone Numbers.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is classified as dangerous in accordance with the Preparations Directive 1 999/45/EC.

Hazardous Substance(s)	EINECS / ELINCS NO	CAS NO	SYMBOL	R-PHRASES / NOTAS	% (w/w)
2,2-Dibromo-3-nitrilopropionamide	233-539-7	10222-01 -2	T,N	R23/25, R38, R41, R43, R50	10 - < 25
Polyethylene Glycol	Polymer	Polymer		OEL	40 - 60

Refer to Section 16 for descriptions of relevant risk phrases and Notas.

4. FIRST AID MEASURES**INHALATION :**

Get immediate medical attention. Remove to fresh air, treat symptomatically.

SKIN CONTACT :

Immediately flush with plenty of water for at least 15 minutes. Contaminated leather articles such as shoes or belts must be discarded. If symptoms develop, seek medical advice.

EYE CONTACT :

Get immediate medical attention. PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush eye with water for at least 15 minutes while holding eyelids open.

INGESTION :

Seek medical advice immediately, showing the label and/or SDS. Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If reflexive vomiting occurs, rinse mouth and repeat administration of water.

NOTE TO PHYSICIAN :

Aspiration may cause lung damage. Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : > 182 °C COC

EXTINGUISHING MEDIA :

Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :

May evolve oxides of carbon (COx) under fire conditions. May evolve bromine, cyanogen bromide and dibromoacetonitrile under fire conditions. May evolve oxides of nitrogen (N Ox) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.



MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Wash site of spillage thoroughly with water. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Prevent material from entering sewers or waterways. If drains, streams, soil or sewers become contaminated, notify local authority.

7. HANDLING AND STORAGE

HANDLING :

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid generating aerosols and mists. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE CONDITIONS :

Store in suitable labeled containers. Store the containers tightly closed. Containers require venting bungs to avoid over pressure. Avoid extremes of temperature. Storage temperature <35°C. 6 month shelf life under given storage conditions

SUITABLE CONSTRUCTION MATERIAL :

PVC, Polypropylene, Polyethylene, Hastelloy C-276, HDPE (high density polyethylene), Teflon, Viton

UNSUITABLE CONSTRUCTION MATERIAL :

Copper, Brass, Aluminum, Mild steel, Buna-N, Ethylene propylene, Neoprene, Polyurethane, Hypalon, Stainless Steel 304, Stainless Steel 316L, Carbon steel

SPECIFIC USE(S) :

BIOCIDE

For specific dosages and customized applications please contact your representative.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

Country/Source	Substance(s)	Category:	ppm	mg/m3
----------------	--------------	-----------	-----	-------

**MATERIAL SAFETY DATA SHEET****PRODUCT****ACCEPTA 2028****EMERGENCY TELEPHONE NUMBER(S)**

Manufacturer's Recommendation	2,2-Dibromo-3-nitrilopropionamide	CEILING	2
AUSTRIA	Polyethylene Glycol (Inhalable fraction.)	MAK MAK STEL	1,000 4,000
DENMARK	Polyethylene Glycol	GV	1,000
GERMANY	Polyethylene Glycol (Inhalable fraction.)	AGW	1,000
SWITZERLAND	Polyethylene Glycol	TWA	1,000
SLOVAKIA	Polyethylene Glycol	TWA	1,000

See section 16, for Emergency Telephone Numbers.

		CEILING	8,000
SLOVENIA	Polyethylene Glycol (Inhalable fraction.)	TWA	1,000

* A skin notation refers to the potential significant contribution to overall exposure by the cutaneous route, including mucous membranes and the eyes.

MONITORING MEASURES :

A small volume of air is drawn through an absorbant or barrier to trap the substance(s) which can then be desorbed or removed and analyzed as referenced below:

Substance(s)	Method	Analysis	Absorbant
Polyethylene Glycol	No method identified		
2,2-Dibromo-3-nitrilopropionamide	In-house method: 99	High pressure liquid chromatography	Silica gel

ENGINEERING MEASURES :

Use general ventilation with local exhaust ventilation.

PERSONAL PROTECTION**GENERAL ADVICE :**

The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with side-shields and workclothes protecting arms, legs and body be used. In addition any person visiting an area



MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

where this product is handled should at least wear safety glasses with side-shields. The applicable European standard can be found in EN 166.

RESPIRATORY PROTECTION :

If significant mists, vapors or aerosols are generated an approved respirator is recommended. A suitable filter material depends on the amount and type of chemicals being handled. The applicable European standard can be found in EN 140, EN 137, EN 143 and EN 14387. Consider the use of filter type: A-B-E-K-P If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

When handling this product, the use of chemical gauntlets is recommended. The choice of work glove depends on work conditions and what chemicals are handled, but we have positive experience under light handling conditions using gloves made from PVC Nitrile Viton Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers. The applicable European standard can be found in EN 374.

SKIN PROTECTION :

Wear a complete suit protecting against chemicals. Wear impervious apron and boots. The applicable European standard can be found in EN 14605 and EN ISO 20345.

EYE PROTECTION :

Wear a face shield with chemical splash goggles. The applicable European standard can be found in EN 166.

HYGIENE RECOMMENDATIONS :

Eye wash station and safety shower are necessary. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

ENVIRONMENTAL EXPOSURE CONTROL PRECAUTIONS :

Consider the provision of containment around storage vessels.

9. | PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Colorless - Amber
ODOR	Mild, Disinfectant
FLASH POINT :	> 182 °C COC
SPECIFIC GRAVITY	1.20 - 1.30 (23 °C) ASTM D-1298
SOLUBILITY IN WATER	Partially miscible
pH (100 %)	1.5 - 5.0 ASTM E-70
VISCOSITY	138 cps (20 °C)
POUR POINT	-45 °C ASTM D-97
FREEZING POINT	-50 °C
BOILING POINT	> 70 °C Decomposes
VAPOR PRESSURE	< 0.01 kPa (21 °C)

Note: These physical properties are typical values for this product and are subject to change.



MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Heat

Keep at temperature not exceeding 35 °C

MATERIALS TO AVOID :

Contact with strong alkalis (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors., Oxidizing agents, Aluminum

HAZARDOUS DECOMPOSITION PRODUCTS :

Decomposes cyanogenbromide and dibromoacetonitrile, Bromine, Oxides of carbon

11. TOXICOLOGICAL INFORMATION

The following results are for the product along with results on the active substances.

ACUTE ORAL TOXICITY :

Species	LD50	Test Descriptor
Rat	178 - 235 mg/kg	Active Substance
Rat	510 mg/kg	Product

ACUTE DERMAL TOXICITY :

Species	LD50	Test Descriptor
Rabbit	> 2,000 mg/kg	Product

ACUTE INHALATION TOXICITY :

Species	LC50	Test Descriptor
Rat	1.25 - 1.4 mg/l (4 hrs)	Product

SENSITIZATION :

May cause sensitization by skin contact.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

MUTAGENICITY : Negative

in the Ames Test.

For additional information on the hazard of the preparation, please consult section 2 and 12.

**MATERIAL SAFETY DATA SHEET**

PRODUCT

ACCEPTA 2028**EMERGENCY TELEPHONE NUMBER(S)**

See section 16, for Emergency Telephone Numbers.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product along with results on the hazardous components. The following results are for the active components.

ACUTE FISH RESULTS :

Species	Exposure	LC50	NOEC	Method	Test Descriptor
Sheepshead Minnow	96 hrs	7.5 mg/l	3.2 mg/l		Product
Fathead Minnow		1.8 - 2.2 mg/l			Active Substance (2,2-Dibromo-3-nitropropionamide)
Sheepshead Minnow		3.3 mg/l			(2,2-Dibromo-3-nitropropionamide)

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	LC50	EC50	Method	Test Descriptor
Ceriodaphnia dubia	48 hrs	6.67 mg/l			Product
Mysid Shrimp (Mysidopsis bahia)	96 hrs	4.2 mg/l	3.2 mg/l		Product
Daphnia magna		0.66 mg/l			Active Substance (2,2-Dibromo-3-nitropropionamide)

AQUATIC PLANT RESULTS :

Species	Exposure	EC50/LC50	Method	Test Descriptor
Green Algae (Selastrum capricornutum)		0.30 mg/l		(2,2-Dibromo-3-nitropropionamide)

ADDITIONAL ECOLOGICAL DATA:

Product contains organic halogens, may contribute to AOX.

PERSISTENCY AND DEGRADATION :

Total Organic Carbon (TOC) : 280,000 mg/l

Chemical Oxygen Demand (COD) : 1,110,000 mg/l

Biological Oxygen Demand (BOD) : Biological degradation: Approx 70-80% 28 Day OECD 301 B (Modified Strum Test)
The organic portion of this preparation is expected to be readily biodegradable.

MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

BIOACCUMULATION POTENTIAL

This substance has a low potential to bioconcentrate.

13. DISPOSAL CONSIDERATIONS

If this preparation becomes a waste, the final user must define and assign the appropriate European Waste Catalogue code. Use only authorized contractors. Ensure compliance with EC, national and local regulations.

This product is suitable for disposal in an approved landfill or by controlled incineration. This product is ashless and can be burned directly in appropriate equipment. Any chemical waste is a potential environmental pollutant and is NOT suitable for disposal via ground, municipal sewers, drains, natural streams or rivers.

Empty drums should be taken for recycling, recovery, or disposal through a suitably qualified or licensed contractor.

EUROPE WASTE CODE :

16 03 05*- OFF SPECIFICATION BATCHES AND UNUSED PRODUCTS - Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code.

NATIONAL REGULATIONS AUSTRIA :

Waste Code :55220

NATIONAL REGULATIONS FRANCE :

Waste Code :Relevant.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT

Proper Shipping Name :	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical Name(s) :	2,2-Dibromo-3-nitrilopropionamide
UN/ID No :	UN 3265
Hazard Class - Primary :	8
Packing Group :	III
ADR/RID H.I.n. :	80
CLASSIFICATION CODE :	C3

AIR TRANSPORT (ICAO/IATA)

Proper Shipping Name :	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical Name(s) :	2,2-Dibromo-3-nitrilopropionamide
UN/ID No :	UN 3265
Hazard Class - Primary :	8
Packing Group :	III
IATA Cargo Packing Instructions :	820
IATA Cargo Aircraft Limit :	60 L (Max net quantity per package)
IATA Passenger Packing Instructions :	Y818 / 818
IATA Passenger Aircraft Limit :	1 L / 5 L

MARINE TRANSPORT (IMDG/IMO)

Proper Shipping Name :	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical Name(s) :	2,2-Dibromo-3-nitrilopropionamide
UN/ID No :	UN 3265
Hazard Class - Primary :	8
Packing Group :	III

OTHER APPLICABLE INFORMATION

CEFIC TREMCARD REFERENCE :	80GC3-III
EMERGENCY ACTION CODE :	2X

15. REGULATORY INFORMATION

CLASSIFICATION AND LABELLING :

GOVERNING DIRECTIVE(S): Dangerous Substances Directive 67/548/EEC and Dangerous Preparations Directive 1 999/45/EC.

HAZARD SYMBOLS



HARMFUL

Contains: . 2,2-Dibromo-3-nitrilopropionamide

RISK PHRASES

R20/22 - Harmful by inhalation and if swallowed.
 R41 - Risk of serious damage to eyes.
 R38 - Irritating to skin.
 R43 - May cause sensitization by skin contact.

SAFETY PHRASES

S23 - Do not breathe vapor.
 S24/25 - Avoid contact with skin and eyes.
 S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
 S46 - If swallowed, seek medical advice immediately and show this container or label.



MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

Water Discharge: Relevant.

NATIONAL REGULATIONS GERMANY
WGK 3 (Annex 4)

NATIONAL REGULATIONS HOLLAND
ABM RESULT

ABM RESULT	Substance(s)	% (w/w)
7 B		

INTERNATIONAL CHEMICAL CONTROL LAWS
EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

UNITED STATES :

This product is exempted under TSCA and regulated under FIFRA. The inerts are on the Inventory List.

CANADA :

Substances regulated under the Pest Control Products Act are exempt from CEPA New Substance Notification requirements.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Ministry of International Trade & industry List (MITI).

16. OTHER INFORMATION

LIST OF RELEVANT R-PHRASES AND NOTAS IN SECTION 3

- R22 - Harmful if swallowed.
- R23 - Toxic by inhalation.
- R38 - Irritating to skin.
- R41 - Risk of serious damage to eyes.
- R43 - May cause sensitization by skin contact.
- R50 - Very toxic to aquatic organisms.
- REVISED INFORMATION: section(s):
- 3



MATERIAL SAFETY DATA SHEET

PRODUCT

ACCEPTA 2028

EMERGENCY TELEPHONE NUMBER(S)

See section 16, for Emergency Telephone Numbers.

| - 8

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

EMERGENCY TELEPHONE NUMBER 0161 877 2334

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth