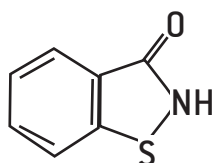


PROXEL™ BD20 Preservative



PROXEL™ BD20 Preservative is a broad spectrum biocide for the preservation of industrial water-based products against spoilage from bacteria, yeasts and fungi. It is a 20% aqueous dispersion of 1,2-benzisothiazolin-3-one.

Applications

The product is effective in a wide range of industrial aqueous-based products. Application areas include:

- Synthetic polymer emulsions
- Emulsion paints
- Water-based adhesives
- Household products
- Printing inks
- Paper coating compositions
- Metal working fluids
- Agricultural pesticide dispersions
- Aqueous mineral and pigment slurries
- Tape joint compounds

Antimicrobial Properties

The levels of product needed to prevent the growth of problem micro-organisms are listed in Table 1; Minimum Inhibitory Concentrations (MICs) do not represent effective use levels but do indicate the broad spectrum of activity.

PROXEL™ BD20 Preservative has a non-specific mode of action which means that bacterial resistance is very unlikely to occur. Detailed information on the mode of action is available on request.

Table 1. Minimum Inhibitory Concentrations (MIC)

Micro-organism	(MIC) * (ppm)
Bacteria	
Alcaligenes faecalis	5
Bacillus subtilis	5
Burkholderia cepacia	40
Enterobacter cloacae	20
Enterococcus faecium	15
Escherichia coli	30
Gluconacetobacter liquefaciens	30
Lactococcus lactis	15
Proteus vulgaris	5
Pseudomonas aeruginosa	40
Pseudomonas putida	55
Pseudomonas stutzeri	10
Staphylococcus aureus	20
Streptovercillium waksmanii	10
Fungi	
Alternaria alternata	225
Aspergillus niger	300
Aureobasidium pullulans	40
Chaetomium globosum	225
Cladosporium cladosporioides	30
Geotrichum candidum	225
Penicillium pinophilum	55
Yeasts	
Candida albicans	55
Rhodotorula mucilaginosa	75
Saccharomyces cerevisiae	115

* A1605543

Table 2. Typical Physical Properties

Composition	Aqueous dispersion of 1,2-benzisothiazolin-3-one.
Active Agent	20% w/w
Physical Form	Fawn dispersion
Viscosity at 25°C	1200-3500 mPa s
pH at 25°C	6.0-8.0
Boiling Point	100°C approx.
Storage Stability	Stable under normal conditions of storage down to 0°C. If frozen, allow to thaw and stir well before use. Active agents are heat-stable and non-volatile.
Flash Point	Boils without flashing
Density at 25°C	1.08 g/ml
Compatibility	Compatible and effective over pH range 4-12. Stable in the presence of amines. Incompatible with some oxidising and reducing agents e.g. persalts, sulphites etc.

Amount to Use

PROXEL™ BD20 Preservative should be added to the system as early in the process as possible. The concentration required to adequately preserve your product depends on several factors. These include the susceptibility of the system to microbiological degradation, the extent to which micro-organisms can gain access, the species involved, pH, temperature, and length of time for which protection is required.

A range of concentrations and applications is recommended in Table 3; however, it is recommended that a testing programme be undertaken to determine the most cost-effective dose for your application.

Testing should take into account chemical compatibility/stability, plant hygiene conditions, susceptibility of the product to contamination, and the typical organisms involved.

Technical Service

Lonza's technical laboratories can assist with the above tests as part of our customer support programme. Please contact your nearest Lonza sales office to take advantage of these customised services.

Table 3. Applications

Product	Concentration % (w/w)
Synthetic Polymer Emulsions	0.05-0.15
Emulsion Paints	0.05-0.15
Water-Based Adhesives	0.05-0.25
Household Products Including Laundry detergents, Fabric softeners, Dish-washing liquids, Floor and wall cleaning solutions, Surface cleaning products, Window cleaners, Floor polishes and waxes, Shoe polishes	0.05-0.15
Printing Inks	0.05-0.15
Paper Coating Compositions	0.05-0.15
Metal working fluids	0.05-0.18
Agricultural pesticide products	0.05-0.25
Aqueous mineral and pigment slurries	0.05-0.15

Risk Assessment & Management

Highly qualified Lonza Safety, Health and Environment (SHE) professionals are available to help define and manage any potential risks to human health or to the environment when using PROXEL products. In addition, Lonza Microbial Control is committed to understanding the suitability of PROXEL BD20 Preservative for specific applications. Please contact your local Lonza sales office should you have questions in this area.

Health And Safety

The PROXEL™ BD20 Preservative Safety Data Sheet may be supplied upon request. It should be read and understood by all supervisory personnel and employees before using this product. If there is any doubt please contact your local Lonza sales office for advice.

Total Quality

Lonza Microbial Control holds a number of ISO 9001 Quality Management registrations covering our product range. The scope of each registration is specific to the location or entity named on the Registration Certificate and our products are supplied to ISO 9001 Standards.

Regulatory Information

The components of PROXEL™ BD20 Preservative are in compliance with the following inventories:

- EINECS (Europe)
- TSCA (USA)
- AICS (Australia)
- ENCS (Japan)
- DSL (Canada)
- KECL (Korea)
- PICCS (Philippines)
- IECSC (China)

In many countries all the chemical components of a product must be listed on the relevant “inventory” of chemical substances before it can be supplied. However, listing on an inventory does not necessarily permit all uses of a product and it does not imply compliance with local or regional regulations on Biocidal products.

In many countries, the use as a dry film preservative or as a preservative against spoilage (i.e. in-can preservation) is subject to additional legislation which often requires a specific product registration.

Enquiries for further information and samples should be addressed to your local sales office.

Contact Information

Hygiene

Lonza Sales Ltd.
Muenchensteinerstrasse 38
4002 Basel, Switzerland
Tel: +41 61 316 81 11
hygiene@lonza.com

Materials Protection

Lonza
Wheldon Road
Castleford, West Yorkshire
WF10 2JT
Tel: +44 1977 714200
microbialcontrol@lonza.com

Use biocides safely. Always read the label and product information before use. The products described herein may not be registered or may be registered only for certain uses in your country.

The product information herein corresponds to our knowledge on the subject at the date of publication and we assume no obligation to update it. It is offered without warranty, either expressed or implied, regarding its accuracy or the results to be obtained from the use of such information and is intended for use by persons who are experienced and knowledgeable in the field and capable of determining the suitability of ingredients for their specific applications. Republication of the statements made herein is prohibited. No claims are made herein for any specific end-use application, and use of the information herein is the sole responsibility of the user based on his or her independent evaluation. Any data relating to test organisms included herein relates to standard laboratory test species and is provided for information only. No claim of controlling organisms in public health applications is made by the inclusion of such data nor should any such claim be implied. The user should perform appropriate tests to determine the suitability and efficacy of our products in the user's application and conditions of use. The information we provide is not intended to substitute for such testing. The user assumes all risks of use and handling and accepts full responsibility for compliance with all applicable Federal, state and local laws and regulations. The information we provide is not intended and should not be construed as a license to operate under or a recommendation to infringe any patent or other intellectual property right, and the user should ensure that his or her use does not infringe any such rights. Our products are for industrial use only. WE MAKE NO WARRANTY (INCLUDING AS TO MERCHANTABILITY OR FITNESS FOR PURPOSE) OF ANY KIND, EXPRESS OR IMPLIED, OTHER THAN THAT OUR PRODUCTS CONFORM TO THE APPLICABLE PRODUCT SPECIFICATIONS.

Lonza Microbial Control is a business unit of Lonza Group Ltd.

PROXEL is a trademark of Arch UK Biocides and its affiliates.

© 2013 Lonza Ltd.

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name : PROXEL™ BD20
Product code : 75265

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Biocidal product

1.3 Details of the supplier of the safety data sheet

Company : Arch UK Biocides
Wheldon Road
Castleford
United Kingdom
WF10 2JT

Telephone : +44 (0)1977 714200
Telefax : +44 (0)1977 714003
Responsible/issuing person : sdsbiocides@archchemicals.com
E-mail address

1.4 Emergency telephone number

Emergency telephone number : +44 (0)1235 239 670

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4	H302: Harmful if swallowed.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.

Classification (67/548/EEC, 1999/45/EC)

Harmful	R22: Harmful if swallowed.
Irritant	R41: Risk of serious damage to eyes.
Sensitising	R43: May cause sensitisation by skin contact.
Dangerous for the environment	R50: Very toxic to aquatic organisms.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal word	:	Danger	
Hazard statements	:	H302 H315 H317 H318 H400	Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Very toxic to aquatic life.
Precautionary statements	:	Prevention: P260 P273 P280	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Avoid release to the environment. Wear protective gloves/ protective clothing/ eye protection/ face protection.
		Response: P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		Disposal: P501	Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

Not applicable

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : aqueous dispersion

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
1,2-Benzisothiazolin-3-one	2634-33-5 220-120-9	Xn; R22 Xi; R38-R41 R43 N; R50	Acute Tox.4; H302 Skin Irrit.2; H315 Eye Dam.1; H318 Skin Sens.1; H317 Aquatic Acute1; H400	20

For explanation of abbreviations see section 16.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- General advice : No hazards which require special first aid measures.
- If inhaled : Move to fresh air.
Keep patient warm and at rest.
Give oxygen or artificial respiration if needed.
When symptoms persist or in all cases of doubt seek medical advice.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off immediately with plenty of water for at least 15 minutes.
If a person feels unwell or symptoms of skin irritation appear, consult a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Keep eye wide open while rinsing.
Immediate medical attention is required.
- If swallowed : Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If you feel unwell, seek medical advice (show the label where possible).

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : See chapter
11. Toxicological information

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- : Water spray
Foam
Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : The product is not flammable.
Do not allow run-off from fire fighting to enter drains or water courses.
- : Burning produces noxious and toxic fumes.

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Ensure adequate ventilation.
Avoid contact with the skin and the eyes.
Refer to protective measures listed in sections 7 and 8.
Wear protective gloves/protective clothing/eye protection/face protection.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before re-use.

6.2 Environmental precautions

- Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.
If the product contaminates rivers and lakes or drains inform respective authorities.
Prevent further leakage or spillage if safe to do so.

6.3 Methods and materials for containment and cleaning up

- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
After cleaning, flush away traces with water.
Retain and dispose of contaminated wash water.
- : Pick up and transfer to properly labelled containers.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- Additional advice : See chapter
8. Exposure controls/personal protection
13. Disposal considerations

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Avoid formation of aerosol.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Use appropriate container to avoid environmental contamination.

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

: Not relevant

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection : In the case of aerosol or mist formation use respirator with an approved filter.
Suitable mask with particle filter P3 (European Norm 143)

Hand protection : Impervious gloves
Nitrile rubber
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.
Gloves must be inspected prior to use.
Replace when worn.
Do not wear leather gloves.

Eye protection : Wear protective gloves/ protective clothing/ eye protection/ face protection.
Tightly fitting safety goggles

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Lightweight protective clothing
disposable one-piece overall with integral hood

Hygiene measures : Avoid contact with skin, eyes and clothing.
High standards of skin care and personal hygiene should be exercised at all times.

Keep working clothes separately.
Wash hands before breaks and immediately after handling the product.
Contaminated work clothing should not be allowed out of the workplace.
Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not eat, drink or smoke.

Protective measures**Environmental exposure controls**

General advice : The product should not be allowed to enter drains, water courses or the soil.
If the product contaminates rivers and lakes or drains inform respective authorities.
Prevent further leakage or spillage if safe to do so.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance	: aqueous dispersion
Colour	: off-white
Odour	: No information available.
Flash point	: Note: Not applicable
Lower explosion limit	: Note: no data available
Upper explosion limit	: Note: no data available
pH	: 6.0 - 8.0
Melting point/range	: ca. -1 °C
Boiling point/boiling range	: ca. 100 °C
Vapour pressure	: Note: no data available
Density	: ca.1.04 g/cm ³ at 20 °C
Water solubility	: Note: no data available
Partition coefficient: n-octanol/water	: Note: no data available

Solubility in other solvents : Note: not determined

Viscosity, dynamic : 1,200 - 3,500 mPa.s
at 25 °C

9.2 Other information

Oxidizing potential : Note: Not relevant

SECTION 10: Stability and reactivity

10.1 Reactivity

None known.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Note: Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Acids
Oxidizing agents
Reducing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Nitrogen oxides (NO_x)
Sulphur oxides

Thermal decomposition : Note: None known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity : LD50
PROXEL™ BD20 Species: Rat male
Dose: 1,520 mg/kg

: LD50
Species: Rat female
Dose: 1,939 mg/kg

: Remarks: Harmful if swallowed.

Acute oral toxicity

Components	Value	Species	Dose	Method
1,2-Benzisothiazolin-3-one	LD50	Rat	=1,020 mg/kg	

Acute inhalation toxicity : Remarks: Inhalation of mist or dried residue causes irritation of
PROXEL™ BD20 respiratory system.

Acute dermal toxicity : LD50
PROXEL™ BD20 Species: Rat
Dose: > 2,000 mg/kg

Skin corrosion/irritation

Skin irritation : Remarks: May irritate skin.
PROXEL™ BD20

Serious eye damage/eye irritation

Eye irritation : Remarks: May cause irreversible eye damage.
PROXEL™ BD20

Respiratory or skin sensitisation

Sensitisation : Remarks: May cause sensitisation by skin contact.
PROXEL™ BD20

Carcinogenicity :
1,2-Benzisothiazolin-3-one : Short term tests and a consideration of the structure have
shown that it is not likely to be a carcinogenic hazard to man.

Further information : no data available
PROXEL™ BD20

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish : LC50
PROXEL™ BD20 Species: *Oncorhynchus mykiss* (rainbow trout)
Dose: estimated 1 - 10 mg/l
Exposure time: 96 h

Toxicity to fish

Components	Value	Species	Dose	Exposure time	Method
1,2-Benzisothiazolin-3-one	LC50	<i>Oncorhynchus mykiss</i> (rainbow trout)	2.18 mg/l	96 h	OECD Test Guideline 203

Toxicity to daphnia and other : Immobilization EC50
aquatic invertebrates : Species: *Daphnia magna* (Water flea)
PROXEL™ BD20 Dose: estimated 1 - 10 mg/l
Exposure time: 48 h

PROXEL™ BD20

Toxicity to daphnia and other aquatic invertebrates

Components	Value	Species	Dose	Exposure time	Method
1,2-Benzisothiazolin-3-one	EC50	Daphnia magna (Water flea)	2.94 mg/l	48 h	OECD Test Guideline 202

Toxicity to algae : ErC50
PROXEL™ BD20 Species: Pseudokirchneriella subcapitata (green algae)
Dose: estimated 0.1 - 1 mg/l
Exposure time: 72 h

Toxicity to algae

Components	Value	Species	Dose	Exposure time	Method
1,2-Benzisothiazolin-3-one	ErC50	Pseudokirchneriella subcapitata (green algae)	0.11 mg/l	72 h	OECD Test Guideline 201

12.2 Persistence and degradability

Biodegradability
1,2-Benzisothiazolin-3-one : Remarks: Inherently biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation
1,2-Benzisothiazolin-3-one : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility
PROXEL™ BD20 : Remarks: no data available

12.5 Results of PBT and vPvB assessment

PROXEL™ BD20 : This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT)., This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Additional ecological information
PROXEL™ BD20 : Very toxic to aquatic organisms.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

- Product : This material and its container must be disposed of as hazardous waste.
The product should not be allowed to enter drains, water courses or the soil.
Dispose of as hazardous waste in compliance with local and national regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
- Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

Dangerous for Transport

IATA

- 14.1 UN number** : 3082
14.2 Proper shipping name : Environmentally hazardous substance, liquid,
n.o.s.
(1,2-Benzisothiazolin-3-one)
14.3 Transport hazard class : 9
14.4 Packing group : III
Labels : 9MI
14.5 Environmental hazards : yes

IMDG

- 14.1 UN number** : 3082
14.2 Proper shipping name : Environmentally hazardous substance, liquid,
n.o.s.
(1,2-Benzisothiazolin-3-one)
14.3 Transport hazard class : 9
14.4 Packing group : III
Labels : 9
EmS Number 1 : F-A
EmS Number 2 : S-F
14.5 Environmental hazards : Marine pollutant: yes

ADR

14.1	UN number	: 3082
14.2	Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-Benzisothiazolin-3-one)
14.3	Transport hazard class	: 9
14.4	Packing group	: III
	Classification Code	: M6
	Hazard Identification Number	: 90
	Labels	: 9
14.5	Environmental hazards	: yes

RID

14.1	UN number	: 3082
14.2	Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-Benzisothiazolin-3-one)
14.3	Transport hazard class	: 9
14.4	Packing group	: III
	Classification Code	: M6
	Hazard Identification Number	: 90
	Labels	: 9
14.5	Environmental hazards	: yes

DOT

14.1	UN number	: 3082
14.2	Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (1,2-Benzisothiazolin-3-one)
14.3	Transport hazard class	: 9
14.4	Packing group	: III
	Labels	: 9
	Emergency Response Guidebook Number	: 171
14.5	Environmental hazards	: yes

TDG

14.1 UN number	:	3082
14.2 Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-Benzisothiazolin-3-one)
14.3 Transport hazard class	:	9
14.4 Packing group	:	III
Labels	:	9
14.5 Environmental hazards	:	yes
14.6 Special precautions for user	:	
Other information	:	Refer to protective measures listed in sections 7 and 8.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	:	
Remarks	:	Not relevant

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Major Accident Hazard	:	96/82/EC	Update: 2003
Legislation	:	Dangerous for the environment Quantity 1: 100 t Quantity 2: 200 t	
Water contaminating class (Germany)	:	WGK 2 water endangering	
Volatile organic compounds (VOC) content	:	Directive 1999/13/EC Not applicable	

15.2 Chemical Safety Assessment

Not applicable

SECTION 16: Other information**Full text of R-Phrases**

R22	:	Harmful if swallowed.
R38	:	Irritating to skin.
R41	:	Risk of serious damage to eyes.
R43	:	May cause sensitisation by skin contact.
R50	:	Very toxic to aquatic organisms.

Full text of H-Statements

H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H400	:	Very toxic to aquatic life.

Further information

PROXEL is a trade mark of ARCH UK BIOCIDES LTD

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.
