

INDUSTRIAL BIOCIDES

by
LANXESS and
TER Chemicals
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LANXESS

Energizing Chemistry

LANXESS Material Protection Products is a worldwide leading manufacturer of biocidal active ingredients and formulations. LANXESS offers a wide range of products useful in many different applications such as paint and varnish preservation, wood protection, disinfection, and many other industrial applications. In order to fully satisfy customers' needs, LANXESS continually invests in the research and development of innovative products.

LANXESS supports a specialized department dedicated to material protection for a broad range of products in Building, Paints, Coatings, Industrial and Home Care, Metal Working Fluids, Adhesives, Sealings and many others. The LANXESS Application Laboratory can provide customized support, recommendations on the selection of biocides for specific products and testing.

The LANXESS Material Protection Products portfolio comprises more than 70 high quality biocides of the PREVENTOL®, BIOCHEK®, TEKTAMER®, METASOL® and ANTIMICROBIAL® product ranges. New innovative releases are available, like PREVENTOL® BMO basic, with excellent efficiency/cost performance, and PREVENTOL® NEXT A 6-D with slow release of the active ingredient.

This product diversity offers the possibility to create tailored solutions to problems especially in the Product Types (PT) 6 and 7, but also other PTs, described in the Biocidal Products Regulation (BPR).

Biocides

Biocides are chemical or microbiological substances, that are intended to neutralize harmful organisms in the non-agricultural sector. Among others, these harmful organisms may include fungi, bacteria, yeasts and algae. Microbial activity can cause discoloration, break down of emulsions, gelling or thinning, shifts in pH, bad odor and even gassing. On surfaces visible growth of fungi, bacteria and algae can occur. Biocides provide protection for health and protection of products. Therefore, biocides play a significant role in the maintenance of health and hygiene standards.

Biocides Product Regulation

The BPR is the binding frame work on Biocides and applications of the European Community. Beside the necessity of being legally registered as a producer and supplier of specific Biocides, the various biocidal products need to be registered for the application with defined product types (PT). Member states demand additional registration for the majority of the PTs in the respective country according to local law. Due to the extraordinary effort and cost to register in The Netherlands and Belgium we can only offer a limited portfolio there.

As supplier according to Article 95 of BPR, LANXESS has registered the broadest active substance portfolio of a single supplier in Europe.

Services enabled by LANXESS

Services of LANXESS include sound consulting and hygiene audits, but also technical support, e.g. in can and dry film microbiological tests, challenge tests, germ identification, leaching, artificial weathering.

In case needed registered formulations can be made available as well as Letters of Access.

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Name	Type*	Active Ingredients	Physical Form	pH - range	T-range [°C]	Recommended use level [%]
BIOCHEK 410	B,F	DBDCB / BIT	Dispersion	3 - 9	< 60	0.05 - 0.4
BIOCHEK 721 M	B,F	DBDCB / BRONOPOL	Solution	3 - 9	< 60	0.0075 - 0.3
N-2000 ANTIMICROBIAL	B,F	DGH	Solution	3 - 9	< 40	0.0025 - 0.1
N-2001 ANTIMICROBIAL	B,F	DGH	Solution	3 - 9	< 40	0.0025 - 0.1
METASOL TK 100	F	THIABENDAZOLE	Powder	3 - 10	< 60	0.02 - 0.4
METASOL TK 25 AD	F	THIABENDAZOLE	Dispersion	3 - 10	< 60	0.08 - 1.6
PREVENTOL A 12	F	PROPICONAZOLE	Liquid	3 - 10	< 60	0.1 - 1.5
PREVENTOL A 12-TK 20	F	PROPICONAZOLE / IPBC	Solution	3 - 10	< 60	1 - 4
PREVENTOL A 12-TK 45	F	PROPICONAZOLE / IPBC	Solution	3 - 10	< 60	0.6 - 3
PREVENTOL A 12-TK 50	F	PROPICONAZOLE	Solution	3 - 10	< 40	0.1 - 3
PREVENTOL A 17-D	F	THIABENDAZOLE / OIT	Dispersion	3 - 10	< 60	0.08 - 1.2
PREVENTOL A 31-D	F,A	DIURON / IPBC / PROPICONAZOLE	Dispersion	3 - 10	< 30	0.8 - 1.6
PREVENTOL A 6	F,A	DIURON	Powder	3 - 10	< 40	0.025 - 0.25
PREVENTOL A 6-M	F,A	DIURON	Powder	3 - 10	< 40	0.03 - 0.3
PREVENTOL A 6-D	F,A	DIURON	Dispersion	3 - 10	< 40	0.05 - 0.5
PREVENTOL NEXT A 6-D	F,A	DIURON	Dispersion	3 - 10	< 40	0.07 - 1.4
PREVENTOL A 17-D	F	THIABENDAZOLE / OIT	Dispersion	3 - 10	< 60	0.08 - 1.2
PREVENTOL BIT 10	B,F	BIT	Solution	2 - 12	< 100	0.1 - 0.4
PREVENTOL BIT 20-D	B,F	BIT	Dispersion	2 - 12	< 100	0.05 - 0.25
PREVENTOL BIT 20 N	B,F	BIT	Solution	2 - 12	< 100	0.05 - 0.25
PREVENTOL BM 10	B,F	BIT / MIT	Solution	3 - 10	< 60	0.05 - 0.2
PREVENTOL BM 25	B,F	BIT / MIT	Solution	3 - 10	< 60	0.05 - 0.3
PREVENTOL BM 5	B,F	BIT / MIT	Solution	3 - 10	< 60	0.1 - 0.4
PREVENTOL BM 75	B,F	BIT / MIT	Solution	3 - 10	< 60	0.1 - 0.4
PREVENTOL BMO	B,F	BIT / MIT / OIT	Solution	3 - 10	< 60	0.05 - 0.3
PREVENTOL BMO basic	B,F	BIT / MIT / OIT	Solution	3 - 10	< 60	0.05 - 0.3
PREVENTOL BMP	B,F	BIT / MIT / BRONOPOL	Dispersion	2.5 - 8.5	< 60	0.05 - 0.3
PREVENTOL CMK	B,F	PCMC(CMK)	Pastilles	1 - 14	< 60	0.05 - 15
PREVENTOL CMK 40	B,F	PCMC(CMK)	Solution	1 - 14	< 60	0.25 - 37.5
PREVENTOL D 2	B,F	BENZYLOXYMETHANOL	Liquid	3 - 12	< 40	0.05 - 0.3

* Type B = Bactericide F = Fungicide A = Algicide

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PREVENTOL D 12	B,F	CMIT/MIT / EDDM	Solution	2 - 10	< 60	0.05 - 0.3
PREVENTOL D 6 forte	B,F	CMIT/MIT / EDDM	Solution	3 - 10	< 45	0.01 - 0.2
PREVENTOL D 7	B,F	CMIT/MIT	Solution	2.5 - 9	< 40	0.05 - 0.3
PREVENTOL D 7 LT	B,F	CMIT/MIT – monovalent	Solution	2.5 - 9	< 40	0.05 - 0.3
PREVENTOL D 9 plus	B,F	OIT / EDDM	Solution	3 - 10	< 60	0.075 - 0.2
PREVENTOL EDDM	B,F	EDDM	Liquid	3 - 10	< 60	0.05 - 0.35
PREVENTOL GDA 50	B,F	GDA	Solution	2.5 - 9	< 60	0.002 - 0.1
PREVENTOL IT 14	B,F	CMIT/MIT	Solution	1 - 9	< 40	0.01 - 0.02
PREVENTOL MP 100	F	IPBC	Powder	3 - 10	< 40	0.015 - 1.3
PREVENTOL MP 260	F	IPBC	Solution	3 - 10	< 40	0.05 - 4
PREVENTOL MP 360	F	IPBC / PROPICONAZOLE	Solution	3 - 10	< 40	0.2 - 2.5
PREVENTOL MP 400-D	F	IPBC	Solution	3 - 10	< 40	0.08 - 1.5
PREVENTOL MP 700	F	IPBC	Solution	3 - 10	< 40	1.6 - 3.3
PREVENTOL MPT 11	F	IPBC / THIABENDAZOLE	Powder	3 - 10	< 40	0.1 - 0.4
PREVENTOL MPT 11-40	F	IPBC / THIABENDAZOLE	Powder	3 - 10	< 40	0.2 - 0.8
PREVENTOL O extra	B,F	OPP	Flakes	2 - 14	< 60	0.05 - 0.3 (even up to 10%)
PREVENTOL O 20	B,F	OPP	Powder	2 - 14	< 60	0.02 - 1
PREVENTOL OF 45	B,F	OPP	Solution	2 - 14	< 60	0.2 - 0.7
PREVENTOL ON extra	B,F	SOPP	Flakes	2 - 14	< 60	0.15 - 1.6
PREVENTOL ON-S	B,F	SOPP	Powder	2 - 14	< 60	0.15 - 1.6
PREVENTOL P 100	B	BRONOPOL	Crystals	3 - 8.5	< 60	0.001 - 0.03
PREVENTOL P 72 W	B	BRONOPOL	Solution	3 - 8.5	< 60	0.01 - 0.2
PREVENTOL P 301	B,F	CMIT/MIT / BRONOPOL	Solution	3 - 8.5	< 45	0.02 - 0.3
PREVENTOL P 91	B,F	CMIT/MIT / BRONOPOL	Solution	3 - 8.5	< 45	0.03 - 0.4
PREVENTOL P 91 MV	B,F	CMIT/MIT – monovalent / BRONOPOL	Solution	3 - 8.5	< 45	0.03 - 0.4
PREVENTOL RI 50	B,F	ADBAC/BKC	Solution	1 - 12	< 40	0.004 - 3
PREVENTOL RI 80	B,F	ADBAC/BKC	Solution	1 - 12	< 40	0.0025 - 2
PREVENTOL WB	B,F	PCMC(CMK), / OPP	Solution	1 - 14	< 60	0.05 - 15
TEKTAMER 38	B,F	DBDCB	Powder	3 - 9	< 60	0.01 - 0.1
TEKTAMER 38 AD	B,F	DBDCB	Solution	3 - 9	< 60	0.04 - 0.3

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Active Substances – Legend and Product Type Registration

Synonym	Active Substance Name(s)	EC No.	CAS No.	Product Type													
				1	2	3	4	5	6	7	8	9	10	11	12	13	
ADBAC	Alkyl (C12-16 dimethylbenzyl ammonium chloride (ADBAC/BKC (C12-16))	270-325-2	68424-85-1	•	•	•	•							•	•	•	
BENZYLOXYMETHANOL	(benzyloxy)methanol	238-588-8	14548-60-8							•							•
BIT	1,2-benzisothiazol-3(2H)-one (BIT)	220-120-9	2634-33-5		•					•							•
BRONOPOL	Bronopol	200-143-0	52-51-7		•					•					•	•	
CMIT/MIT	Mixture of 5-chloro-2-methyl-2H-isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT)		55965-84-9		•					•					•	•	•
CMK	Chlorocresol (PCMC)	200-431-6	59-50-7	•	•	•				•			•				•
DBDCB	2-bromo-2-(bromomethyl) pentanedinitrile (DBDCB)	252-681-0	35691-65-7							•							
DGH	Dodecylguanidine monohydrochloride	237-030-0	13590-97-1							•					•		
DIURON	3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	206-354-4	330-54-1							•				•			
EDDM	(ethylenedioxy)dimethanol (Reaction products of ethylene glycol with paraformaldehyde (EGForm))	222-720-6	3586-55-8		•					•					•	•	•
GDA	Glutaral, Glutaraldehyde, 1,5-pentanedial	203-856-5	111-30-8		•	•	•			•					•	•	
IPBC	3-iodo-2-propynylbutylcarbamate (IPBC)	259-627-5	55406-53-6							•	•	•	•	•			•
MIT	2-methyl-2H-isothiazol-3-one (MIT)	220-239-6	2682-20-4							•							•
OIT	2-octyl-2H-isothiazol-3-one (OIT)	247-761-7	26530-20-1							•	•		•	•			•
OPP / SOPP	Biphenyl-2-ol (OPP) / Sodium salt	201-993-5	90-43-7	•	•	•	•			•	•		•	•			•
PROPICONAZOLE	1-[[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole (Propiconazole)	262-104-4	60207-90-1								•	•	•				
THIABENDAZOLE	2-thiazol-4-yl-1H-benzimidazole (Thiabendazole)	205-725-8	148-79-8							•	•	•	•				

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Product Types - Description

PT	Class	Description
1	Human hygiene	Products in this group are biocidal products used for human hygiene purposes, applied on or in contact with human skin or scalps for the primary purpose of disinfecting the skin or scalp.
2	Disinfectants and algicides not intended for direct application to humans or animals	Used for the disinfection of surfaces, materials, equipment and furniture which are not used for direct contact with food or feeding stuffs. Usage areas include, inter alia, swimming pools, aquariums, bathing and other waters; air conditioning systems; and walls and floors in private, public, and industrial areas and in other areas for professional activities. Used for disinfection of air, water not used for human or animal consumption, chemical toilets, waste water, hospital waste and soil. Used as algicides for treatment of swimming pools, aquariums and other waters and for remedial treatment of construction materials. Used to be incorporated in textiles, tissues, masks, paints and other articles or materials with the purpose of producing treated articles with disinfecting properties.
3	Veterinary hygiene	Used for veterinary hygiene purposes such as disinfectants, disinfecting soaps, oral or corporal hygiene products or with anti-microbial function. Used to disinfect the materials and surfaces associated with the housing or transportation of animals.
4	Food and feed area	Used for the disinfection of equipment, containers, consumption utensils, surfaces or pipework associated with the production, transport, storage or consumption of food or feed (including drinking water) for humans and animals. Used to impregnate materials which may enter into contact with food.
5	Drinking water	Used for the disinfection of drinking water for both humans and animals.
6	Preservatives for products during storage	Used for the preservation of manufactured products, other than foodstuffs, feeding stuffs, cosmetics or medicinal products or medical devices by the control of microbial deterioration to ensure their shelf life. Used as preservatives for the storage or use of rodenticide, insecticide or other baits.
7	Film preservatives	Used for the preservation of films or coatings by the control of microbial deterioration or algal growth in order to protect the initial properties of the surface of materials or objects such as paints, plastics, sealants, wall adhesives, binders, papers, art works.
9	Fibre, leather, rubber and polymerized materials preservatives	Used for the preservation of fibrous or polymerized materials, such as leather, rubber or paper or textile products by the control of microbiological deterioration. This product-type includes biocidal products which antagonize the settlement of micro-organisms on the surface of materials and therefore hamper or prevent the development of odor and/or offer other kinds of benefits.
10	Construction material preservatives	Used for the preservation of masonry, composite materials, or other construction materials other than wood by the control of microbiological and algal attack.
11	Preservatives for liquid-cooling and processing systems	Used for the preservation of water or other liquids used in cooling and processing systems by the control of harmful organisms such as microbes, algae and mussels. Products used for the disinfection of drinking water or of water for swimming pools are not included in this product-type.
12	Slimeicides	Used for the prevention or control of slime growth on materials, equipment and structures, used in industrial processes, e.g. on wood and paper pulp, porous sand strata in oil extraction.
13	Working or cutting fluid preservatives	Products to control microbial deterioration in fluids used for working or cutting metal, glass or other materials.

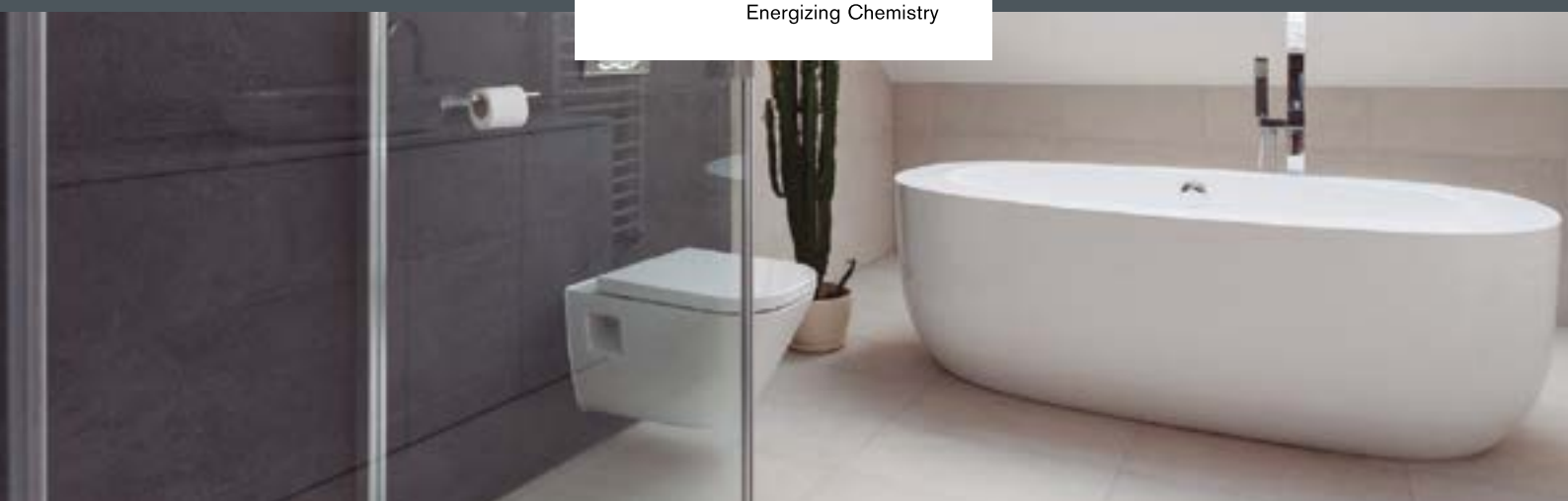


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Use Biocides safely. Always read the label and product information before use.

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