

QUALITY PROTECTS.



Preservatives for detergents
without H 317 label.

 **Preventol®**  **Biochek®**

QUALITY WORKS.

LANXESS
Energizing Chemistry



GHS 07 SYMBOL ON THE END PRODUCT

All chemicals have to be classified and labeled according to Globally Harmonized System of Classification and Labeling of Chemicals (GHS) prior to being sold. This is to protect humans and the environment from any potential negative effects when dealing with chemicals.

When an end product contains a certain level of a chemical substance that is classified as dangerous, it has to be labeled with a hazard statement according to GHS.



GHS 07 symbol

Some hazard statements require an additional danger symbol. The GHS 07 symbol is required when the following hazard statements apply.

H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness

HAZARD STATEMENT: H 317 LABELING

When the dosage of an H 317 chemical substance exceeds the labeling limit, the end product itself has to be classified as sensitizer. It then has to be labeled with the GHS 07 symbol plus the hazard statement: *"May cause an allergic skin reaction"*



May cause an allergic skin reaction

PRECAUTIONARY STATEMENT: EUH 208

EUH 208 is a precautionary statement that appears on the end product when a certain concentration of the H 317 limit has been reached (usually 1/10). It does not require an additional symbol.

***Contains methyisothiazolinone.
May produce an allergic reaction.***

LABELING LIMITS FOR MIT **WHAT WILL CHANGE?**

Water-based household detergents require protection against decay by bacteria and fungi. The choice of preservatives is limited and regulated by the Biocidal Products Directive in the EU. Many common preservatives have a sensitizing potential. The Committee for Risk Assessment (RAC) has recently suggested to decrease the labeling limits for MIT.

H 317 label on the end product

Today: > 1000 ppm
Proposed: > 15 ppm

EU H 208 warning phrase

Today: > 100 ppm
Proposed: > 1.5 ppm

LEGAL IMPLEMENTATION

EARLIEST BY END OF 2019

The publication of the 12th ATP (adoption of technical process) with possible new MIT labeling limits by the EU commission is expected earliest end of 2017. As the new legislation will be implemented 12-18 months later, it is expected to come into force by mid of 2019 at the earliest.

CONSEQUENCES FOR **DETERGENTS**

The proposed limits will have severe consequences for the popular MIT as an active ingredient in preservatives for household detergents.

With the required effective dosage of 50 – 200 ppm for the preservation of household detergents, MIT cannot be used without an H 317 label on the end product in future.

Additionally it is expected that end products labeled with H 317 will be forbidden in consumer markets. Consequently, MIT-free alternatives for preservation will have to be found quickly.

AVOIDING H 317 IS HARDLY POSSIBLE WITH THESE **PRODUCTS**

Preservative system		Today's limit for H 317	Future limit for H 317	Effective dosage
BIT + MIT	2.5 % 2.5 %	2 %	0.06 %	0.05 - 0.2%
BIT + MIT + OIT	2.5 % 5.0 % 2.5 %	2 %	0.03 %	0.10 - 0.2%
BIT + MIT + Bronopol	2.5 % 2.5 % 8.0 %	2 %	0.06 %	0.05 - 0.2%

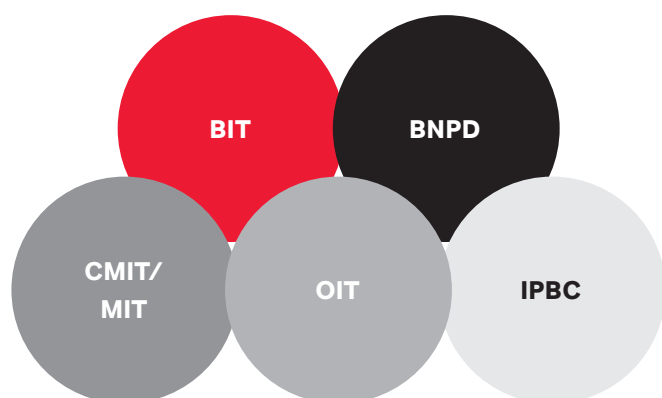
BIT = Benzisothiazolinone
MIT = Methylisothiazolinone
OIT = Octylisothiazolinone



LANXESS OFFERS **MIT-FREE** STANDARD FORMULATIONS...

Traditional standard biocide formulations without MIT contain active ingredients such as Isothiazolinones (BIT, CMIT/MIT, OIT), Bronopol or IPBC.

LANXESS already offers these active ingredients as single active ingredients or in combination as MIT-free formulations. In addition to these existing products LANXESS is working on an enhanced MIT-free portfolio for in-can applications. New formulations are being tested and will be available soon.



... AND INTERESTING **NON-SENSITIZING PRESERVATIVES**

Additionally, LANXESS is able to supply active ingredients or formulations with biocides that have no or little sensitizing potential.

These active ingredients are viewed as good possible alternatives for detergents in future. Our formulations can be tested alone or in combination with others.

DBDCB

- Broad efficacy active ingredient
- Effective dosage below 1000 ppm (limit for EUH 208 label)

DGH

- Not a sensitizer
- Good water solubility
- Broad spectrum efficacy
- For use in cationic systems such as fabric conditioners

OPP

- Not a sensitizer
- Approved for detergents by Biocidal Products Committee
- Long history in laundry detergents
- Well established in disinfectant cleaners

ZPT

- Not a sensitizer
- Approved for cosmetics
- Broad efficacy
- Preferably for opaque fluids

DBDCB	= Dibromodicyanobutane
DGH	= Dodecylguanidine Hydrochloride
OPP	= Orthophenylphenol
ZPT	= Zinc Pyrithione

WHAT PRESERVATIVE FOR WHICH PRODUCT?



■ FABRIC CONDITIONERS

An important active for LANXESS is DGH. Cationic systems such as fabric conditioners can be preserved with this active ingredient. **N-2000 Antimicrobial*** is a 35% DGH solution in propylene glycol and a good non-sensitizing alternative for fabric conditioners.



■ ALL-PURPOSE CLEANERS

Preventol® BZX*, our BIT/ZPT dispersion, is an excellent option to replace MIT in all-purpose cleaners. For clear fluids we recommend **Preventol® OF 45***, our 45% OPP solution. In order to achieve sufficient antibacterial efficacy, it should be combined with a second component.



■ DISHWASHING LIQUIDS

For dishwashing liquids, DBDCB can be a MIT-free alternative. It has a low sensitizing potential. **Biochek® 722*** is a dispersion of DBDCB and Bronopol and shows excellent results for dishwashing liquids.



■ LAUNDRY DETERGENTS

OPP has been used in laundry detergents for a long time. Our **Preventol® OF 45*** is a 45% OPP solution and could be a non-sensitizing alternative. In order to achieve sufficient antibacterial efficacy, it should be combined with a second component.



***Contact us to start compatibility and biological efficacy tests in our laboratories prior to using our products**

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

TECHNICAL SUPPORT WITH A LONG TRADITION

Our record goes back to 1907, when we produced antimicrobial active ingredients for the first time. Extensive research and development and several acquisitions made us who we are today.

Our highly skilled and expert technical support staff are readily available to answer any questions you may have concerning our biocide products and to find the best solution for your needs. We offer Plant Hygiene audits, and check the preservation efficacy in line with a huge number of international standards such as ISO and national standards for example DIN EN, ASTM and IBRG.

With our service laboratories in Germany, the United States, China, Singapore, Mexico and Brazil, we understand market-specific needs. Our laboratories provide a broad range of methodologies, including evaluations of biocide efficacy and stability, minimal inhibitory concentrations (MICs), and correct ratio of actives, which help us to develop your tailor-made solution.

REGULATORY EXPERTISE AROUND THE GLOBE

Material Protection Products has a dedicated regulatory department to answer the vast amount of global regulatory issues from a local perspective. Customer support in connection with regulatory questions is a fundamental component of our market approach.

Because of our large product portfolio, we have notified an extraordinarily large number of active ingredients in accordance with the BPR. We can be found on the Article 95 list as an authorized supplier for our active ingredients. Product registrations are ongoing, according to relevant deadlines for dossier submission.

Our active ingredients and biocides offered in the U.S. are in compliance with FIFRA, under the governance of the U.S. EPA.



OUR PORTFOLIO FOR PRESERVATIVES IN DETERGENTS



Product	BIT	BNPD	DBDCB	DGH	CMIT / MIT	OPP	ZPT	Supply form	process stability	pH stability	VOC
Biochek® 410	x		x					D	< 60°C	≤ 9.5	no
Biochek® 722		x	x					D	< 60°C	≤ 8.5	no
N-2000 Antimicrobial				x				S	< 80°C	≤ 12	yes
Preventol® BIT 10	x							S	< 100°C	≤ 12	no
Preventol® BIT 20 N	x							S	< 100°C	≤ 12	yes
Preventol® BIT 20 D	x							D	< 100°C	≤ 12	no
Preventol® BIT BN 2	x	x						D	< 60°C	≤ 8.5	no
Preventol® BIT IT	x				x			D	< 60°C	≤ 9	no
Preventol® BZX	x						x	D	< 60°C	≤ 10	no
Preventol® D 7					x			S	< 40°C	≤ 9	no
Preventol® OF 45						x		S	< 100°C	≤ 14	yes
Preventol® P 51 MV		x			x			S	< 40°C	≤ 8.5	no
Preventol® P 301		x			x			S	< 40°C	≤ 8.5	no
Preventol® P 72 W		x						S	< 40°C	≤ 8.5	no
Preventol® P 91		x			x			S	< 40°C	≤ 8.5	no

D = Dispersion

S = Solution

BIT = Benzisothiazolinone

BNPD = Bronopol

CMIT/MIT = Chloromethylisothiazolinone and Methylisothiazolinone

DBDCB = Dibromodicyanobutan

DGH = Dodecylguanidinehydrochloride

OPP = Orthophenylphenol

VOC = Volatile organic compounds

ZPT = Zinc Pyrithione



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

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