

QUALITY PROTECTS.

Velcorin® technology is an oenological practice that protects wine against microorganisms and preserves its natural flavour.

X Velcorin®

QUALITY WORKS.

LANXESS
Energizing Chemistry

VELCORIN® – AN EXCELLENT CHOICE FOR YOUR WINE

Drinking wine encompasses the smell, taste and experience. In brief, wine offers pure enjoyment.

The high expectations of consumers mean that oenologists are always facing new challenges regarding the quality of wine. A key factor is the microbiological stability of the product. The refermentation of wines is a particular problem for oenologists, as microorganisms are everywhere during the production, storage and filling of the wine. Microorganisms that can spoil products, such as yeasts, moulds and bacteria do not just affect the quality and particularly the organoleptic characteristics of the wine, but can in certain circumstances pose a health risk to consumers. Global trade, long transport times as well as different types of packaging are some of the other stresses that wine is exposed to. Trends to develop new products with a lower alcohol content and additional flavours or fruit juices are leading to new challenges.

Nowadays, the microbiological stability of wines is predominantly achieved by using SO₂, filtration, the pH value of the wine and the natural alcoholic content. Velcorin® (dimethyldicarbonate/DMDC) provides an additional, effective oenological practice where we can offer the required protection for all alcoholic beverages for which DMDC has been approved.

VELCORIN® – VERSATILE APPLICATIONS FOR OENOLOGISTS

The most important Velcorin® applications include:

- **Quality assurance thanks to protection against refermentation**
- **Optimisation of filtration**
- **Optimisation of SO₂**
- **Excellently effective against typical wine spoilage yeast organisms e.g. *Brettanomyces***
- **Microbial stabilisation in bulk wine applications**
- **Targeted fermentation stop**
- **Alternative to hot filling process and tunnel pasteurisation**
- **Replacement for potassium sorbate**



UNCOMPROMISING AGAINST MICROORGANISMS

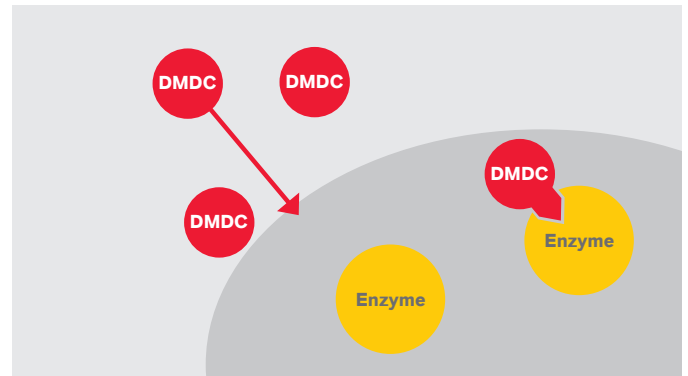
Velcorin® is added during the production of the beverage. Even at low concentrations, Velcorin® is very effective against typical microorganisms such as yeast, bacteria and moulds.

How does Velcorin® work?

Velcorin® penetrates the cell and deactivates enzymes, causing the microorganisms to die.

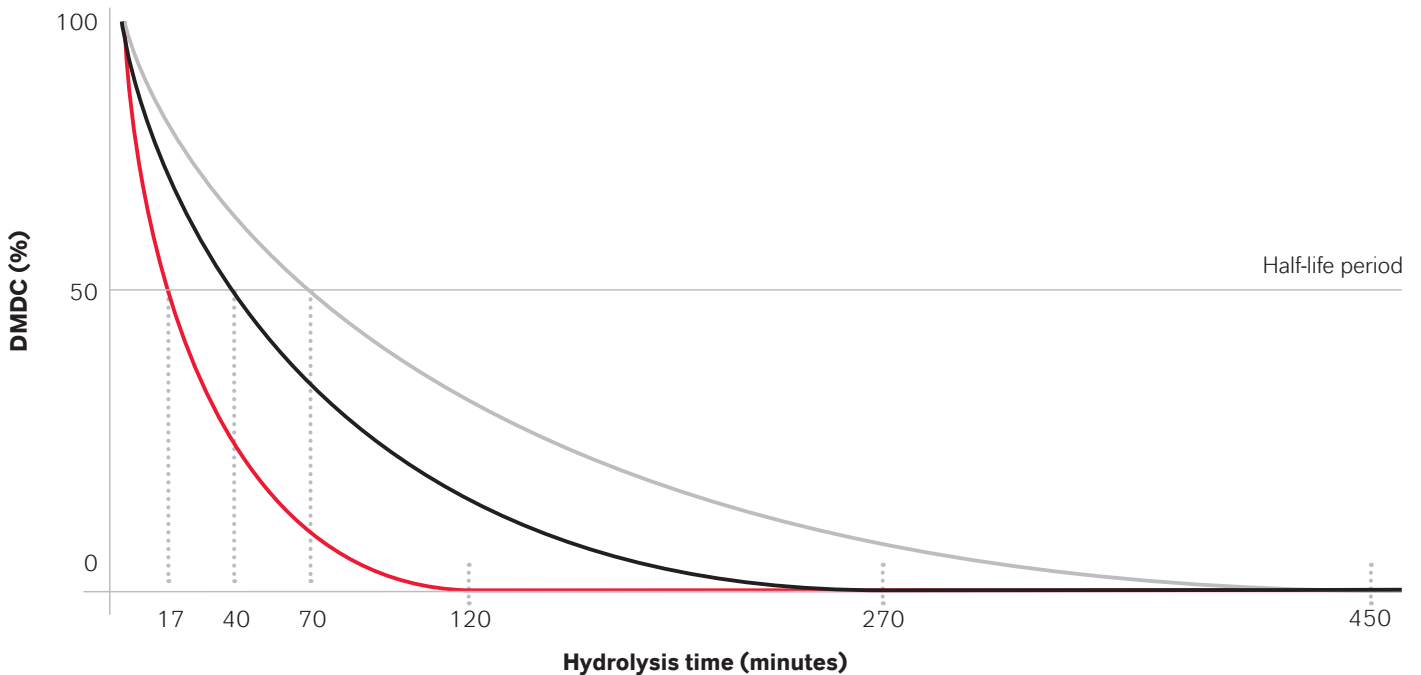
Once added to the wine, Velcorin® rapidly breaks down into negligible amounts of methanol and carbon dioxide, naturally occurring compounds in wine. Consequently, it has no effect on the taste, smell or colour of the beverage.

A simplified illustration of how DMDC works



| What is Velcorin®? | |
|--------------------|----------------------------|
| Composition | Dimethyldicarbonate (DMDC) |
| DMDC | at least 99.8% |

Breakdown (hydrolysis) of Velcorin® in beverages



■ 20°C ■ 10°C ■ 4°C

VELCORIN® – RANGE OF APPLICATIONS

- Wine (white, rosé, red)
- Alcohol-free and low-alcohol wine
- Fruit wines
- Mixed wine beverages
- Apple and pear cider
- Alcoholic mixed beverages
- Alcohol-free soft drinks
- Beer based drinks / Radler

The standard dose of Velcorin® in alcohol-free drinks is 125 mg/l, whereby the max. dose for wine is 200 mg/l. Depending on the approved status, the dose can be up to 250 mg/l in all of the other approved categories.

Exposure data on microorganisms

Minimum lethal concentrations of Velcorin®; populations of up to 500 cfu/ml

| | Velcorin® mg/l |
|---------------------------------|----------------|
| Microorganisms | |
| <i>Acetobacter pasteurianus</i> | 80 |
| <i>Botrytis cinerea</i> | 100 |
| <i>Brettanomyces spp.</i> | < 50 |
| <i>Lactobacillus brevis</i> | 200 |
| <i>Lactobacillus buchneri</i> | 30 |
| <i>Zygosaccharomyces bailii</i> | 120 |
| <i>Saccharomyces cerevisiae</i> | 30 |
| <i>Saccharomyces uvarum</i> | 20 |

USED AROUND THE WORLD

Velcorin® is a recognised oenological practice that is used in a variety of applications in countries that produce wine. In 2011, the International Organisation for Vines and Wine (OIV) considerably extended the use of DMDC in wine, thus ensuring that oenologists could widely use Velcorin® in vinification facilities.

Prominent bodies, such as the EU Scientific Committee on Food, the FDA in the United States and the JECFA of the WHO, have all confirmed that DMDC is safe for use in beverages. The production of Velcorin® is certified according to ISO 9001:2015, ISO 14001:2015, ISO 22000:2005 and FSSC 22000 V4.1. Velcorin® is also certified to meet Halal & Kosher requirements.

We are more than happy to offer you expert advice regarding any regulatory matters relating to the use of Velcorin® and will refer back to the renowned advisors in important wine-producing countries.

VELCORIN® – HAS A WORTHWHILE EFFECT

Even small doses of Velcorin® are already highly effective against typical microorganisms that can spoil products, as well as being cost-effective and simple to use. It can be used for filling into standard packaging such as glass, PET, cases, bag-in-box or pouches, as well as during production, temporary storage or transport in a container. Of course, we also offer you competent application-specific advice and comprehensive services.

VELCORIN® DT TOUCH – DOSING TECHNOLOGY

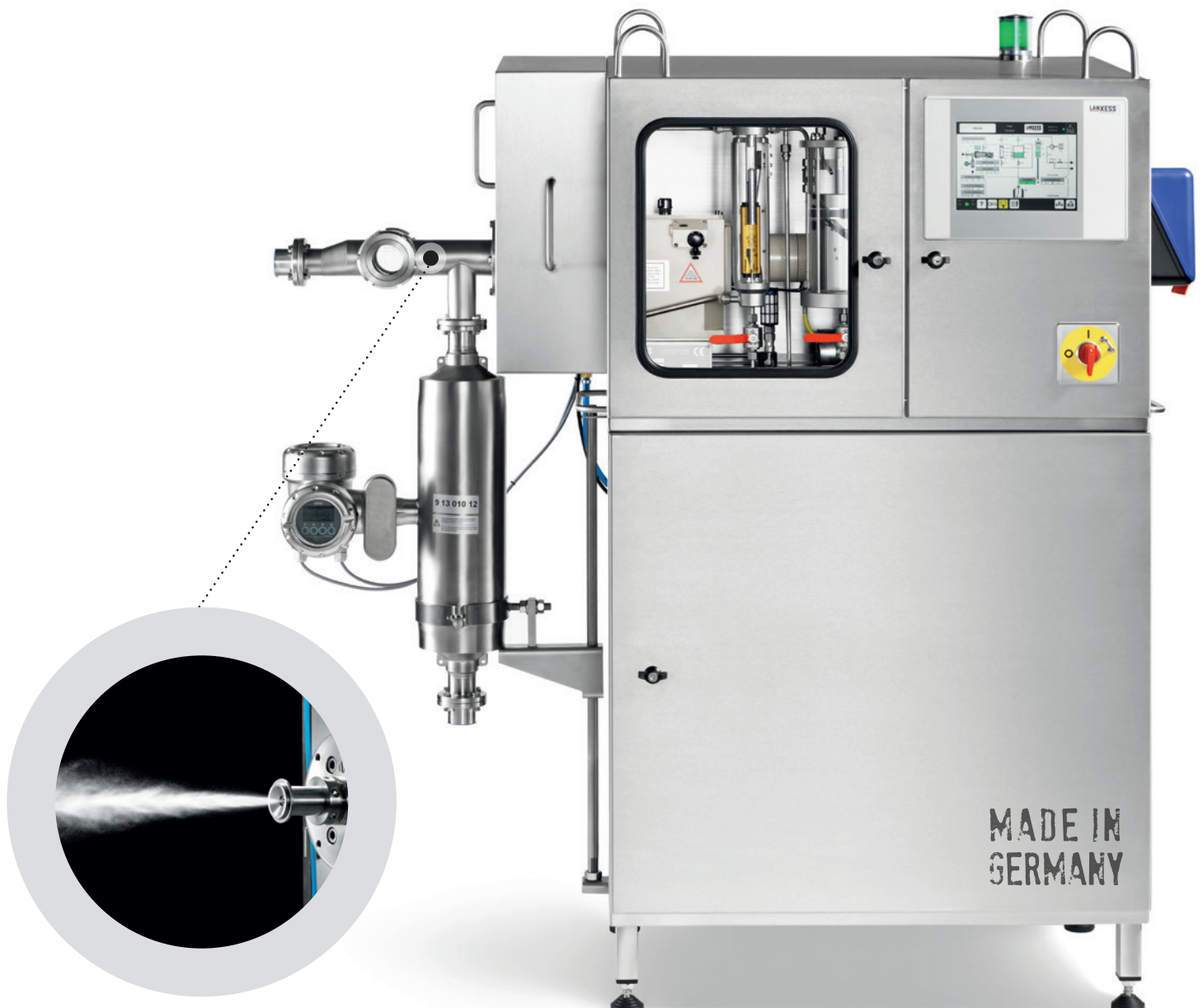
With Velcorin® we not only offer you a highly effective solution for the cold sterilisation of your beverage, but also provide a complete range of services with our state-of-the-art Velcorin® dosing units.

Features of Velcorin® DT Touch:

- High-quality and robust metering pump with monitorable dosing
- Temperature-controlled, stainless steel upper and lower cabinets containing 6 kg or 25 kg bottles
- Control and visualisation via touch panel PC
- Excellent dispersion of Velcorin®
- Beverage flow rate measured by the mass measuring device
- Ventilation on the Velcorin® side
- Easy and safe operation

Control and visualisation of dosing process

- Included in the electronic control system of the filling line
- Automatic display of messages, warnings and maintenance intervals
- System visualisation in a dynamic flow chart
- Clear overview of the target and actual values
- Data storage
- Data transfer via USB
- Various operator levels/access rights





The Velcorin® dosing unit is installed in new or existing filling lines, and can be used for tank-to-tank treatment or upstream of the container filling system. Only minor modifications to the filling line are required for this purpose.

Sizes

| Model range | Min. beverage flow rate l/h | Max. beverage flow rate l/h | Max. Metering rate* ml/hl | Connections in DN |
|-------------|-----------------------------|-----------------------------|---------------------------|-------------------|
| DT 3 Touch | 600 | 3,600 | 20 | 40 |
| DT 6 Touch | 1,200 | 7,200 | 20 | 40 |
| DT 13 Touch | 2,400 | 14,400 | 20 | 50 |
| DT 18 Touch | 3,600 | 21,600 | 20 | 50 |
| DT 30 Touch | 6,000 | 36,000 | 20 | 50 |
| DT 50 Touch | 8,400 | 50,400 | 20 | 80 |
| DT 75 Touch | 13,200 | 79,200 | 20 | 80 |

* Maximum permissible dosing rate depends on the product and country registration.



ALWAYS ON HAND

Comprehensive services and benefits for our customers

Technical Services

On-site support by our technical experts

- Technical evaluation and consultancy
- Line assessment and gap analysis
- Support of lab and industrial trials
- Training of product handling Velcorin®

Lab Services

Full equipped beverage laboratory with various analytical capabilities

Microbiology and molecular biology laboratory

- Isolation and identification of beverage spoiling microorganisms
- Efficacy tests
- Optimization of preservative usage
- Support of hygienic monitoring

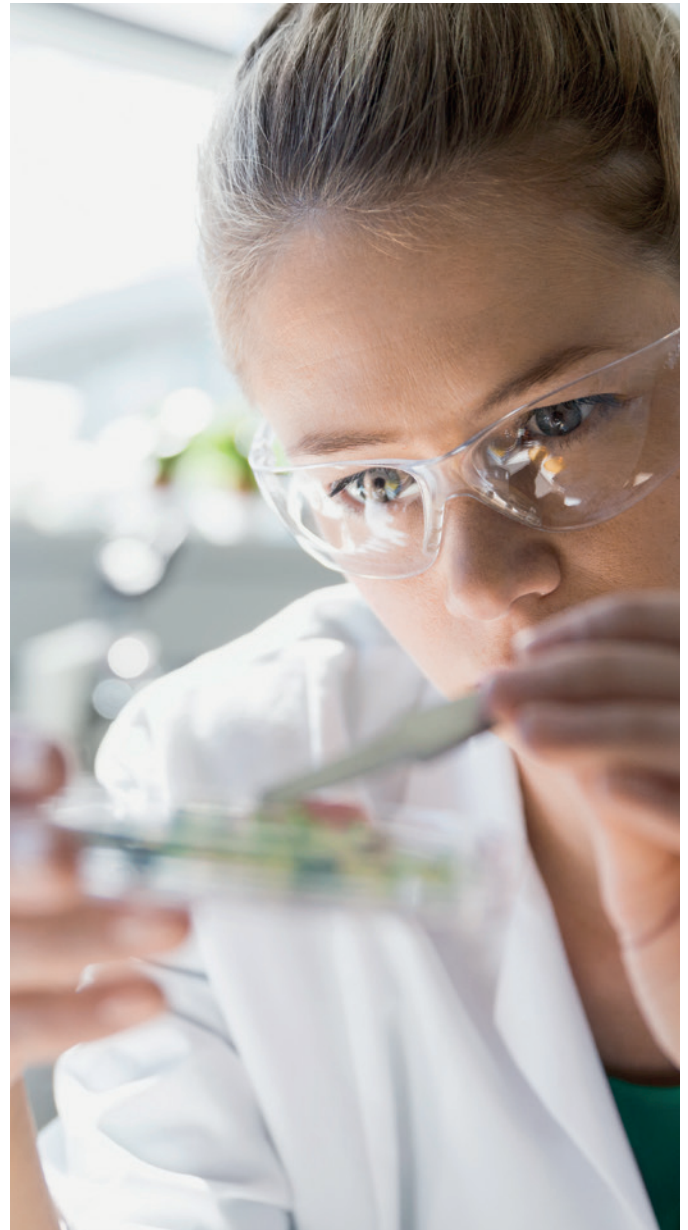
Analytical laboratory

- Determination of Velcorin® dosage as well as other common preservatives
- Testing of key beverage quality parameters
- Existing strong network with external laboratories for further microbiological and analytical testing

Dosing Technology

Certified state of the art equipment – Made in Germany

- Commissioning
- Training
- Service hubs all over the world
- Full service package including preventive maintenance
- 24/7 service hotline
- Loan units on request



What can we do for you?

We look forward to each new challenge – and our next conversation with you!

www.velcorin.com



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The application, use and handling of our products and the products produced by your company on the basis of our application-specific advice are beyond our control and are therefore entirely your own responsibility. Our products are sold in compliance with the appropriate current version of our General sales and delivery terms. According to EU regulations, Velcorin® is a hazardous substance. For details please see the material safety data sheet of Velcorin® on www.velcorin.com.

All of the brands are protected brands of the LANXESS Group, unless specified otherwise.
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