Velcorin®

Registration Overview
Wine
Velcorin® – common information

Velcorin® (dimethyl dicarbonate, DMDC) is used as an antimicrobial control agent in the filling of non-alcoholic beverages and wine. Effective cold sterilization depends on the technical suitability of the beverages to be filled for use with Velcorin®; for example, the pH of the beverage on filling must lie between 2 and 4.

In the presence of water, Velcorin® degrades into tiny amounts of methanol and carbon dioxide, which are also natural components of fruit juices and fruit-juice-based beverages. In the ready-to-use beverage Velcorin® is soon no longer detectable (half-life: approx. 15 minutes at 20 °C).

When purchased by the customer and consumed therefore, Velcorin® is no longer present in the beverage but the fact of its use can be detected analytically.
In your capacity as a food business operator you have chosen to use Velcorin®/dimethyl dicarbonate.

As part of our customer service, we will be happy to provide you with information on Velcorin® and its worldwide approval status as a supplement to our standard technical information sheets and safety data sheets.

The application, use and processing of Velcorin® in the manufacture and marketing of your products are beyond our control and, therefore, entirely your own responsibility as a food business operator. The enclosed description of the legal status only gives a brief, non-binding overview (without warranty and claim to completeness) and is no substitute for your own tests, assessment and legal review since the standards forming the basis of the registration cannot be interpreted universally because of the specific features of national or international (if use for export) legislation.

Carry Over Principle in Beverages

If DMDC has been used in a preliminary product for instance concentrates/syrups and it is in the intention of the manufacturer to sell this product to a downstream manufacturer who will manufacture the final beverages it is his duty to inform about the use and the amount of the used DMDC.
## Velcorin® in wine

### Registration Overview

<table>
<thead>
<tr>
<th>Chemical Name:</th>
<th>Velcorin®</th>
<th>Dimethyl dicarbonate</th>
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</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td></td>
<td>4525-33-1</td>
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<tr>
<td>Synonyms:</td>
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<td>DMDC</td>
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<tr>
<td></td>
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<td>Dicarbonic acid dimethyl ester,</td>
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<td>Dimethyl pyrocarbonate,</td>
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<td></td>
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<td>DMPC</td>
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<tr>
<td>Use:</td>
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<td>microbial control agent</td>
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<td>INS:</td>
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<td>242</td>
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</table>
Registration Overview

REACH Regulation (EG) 1907/2006

The use of Dimethyl dicarbonate (DMDC) is regulated in accordance with Directive 95/2/EC, the so-called miscellaneous directive, in Annex III part C, Other preservative. Products which are approved under this Directive are exempt from Reach (§2).

Due to precautions LANXESS has nevertheless preregistered DMDC. Pre-Reg. No. 05-2114280113-60-0000

OIV: International Organisation of Vine and Wine

Resolution OENO 5/2001

The use of Dimethyl dicarbonate (INS: 242) is specified under the following guidelines:

- should only be added shortly before bottling
- the dosage should be no more than 200 ppm expressed as DMDC
- the addition of DMDC must not lead to surpassing the maximum content level for methanol in wine as recommended by the OIV, OENO 19/2004 (400 ppm red wines, 250 ppm white wines and rosés)
- the wine should not be placed on the market as long as DMDC is detectable
- the DMDC use must comply with the provisions of the international oenological codex

Codex Alimentarius

Dimethyl dicarbonate (INS: 242) is listed as permitted food additive in the Codex General Standard for Food Additives for the following categories concerning wine:

- 14.2.2 cider and perry with a maximum use level of 250 mg/kg
- 14.2.3 Grape wines with a maximum use level of 200 mg/kg
- 14.2.4 Wines (other than grape wines) with a maximum use level of 250 mg/kg
- 14.2.5 Mead with a maximum use level of 200 mg/kg

Residues of DMDC must not detectable in ready to eat food.
European Union (EU) and EU memberstates:

According to (EC) 606/2009 Dimethyl dicarbonate (E 242) is approved under defined conditions for the use in wine, partially fermented must for direct consumption and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV of the Regulation (EC) 479/2008 (transferred to Council Regulation (EC) No 1234/2007 of 22 October 2007 establishing a common organisation of agriculture markets and on specific provisions for certain agriculture products, Appendix Xlb by Council Regulation (EC) No 491/2009 of 25 May 2009 amending Regulation (EC) No 1234/2007 establishing a common organisation of agriculture markets and on specific provisions for certain agricultural products, Appendix III) with a maximum level of 200 ppm. The defined conditions are laid down in Appendix 6 of (EC) 606/2009 are:

- addition must be carried out only a short time prior to bottling
- the treatment may only be applied to wine with a sugar content of not less than 5 g/l
- the product may not be detectable in the wine placed on the market
- the product must comply with the purity criteria laid down in Directive 2008/84/EC
- this treatment is to be recorded in the register referred to in article 112(2) of regulation (EC) No 479/2008

According to Annex IV of (EC) 479/2008 Dimethyl dicarbonate may be used in Liqueur wine, Sparkling wine, Quality sparkling wine, Quality aromatic sparkling wine, Aerated sparkling wine, Semi-sparkling wine, Aerated semi-sparkling wine, wine from raisined grapes and Wine of overripe grapes.

Dimethyl dicarbonate (E 242) is also approved with a maximum level of 250 ppm the following beverages:

- cider and perry
- alcohol free wine
- alcohol-reduced wine
- fruit wines
- wine-based drinks and products covered by Regulation (EEC) No. 1601/91
Reference: Regulation (EC) No 1333/2008 of the European Parliament and of the Council of December 2008 on food additives. The provisions of the Directive 210/69/EU amending the Directive 95/2/EC shall continue for approved food additives until the transfer according to Article 30 (1), (2) and (3) of Regulation No 1333/2008 has been completed.

EU member states: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, The Netherlands, United Kingdom
Other European Countries (Non-EU):

**Norway:** Dimethyl dicarbonate is approved as food additive for use in wine with a maximum use level of 200 mg/kg ingoing amount. Residues must not be detectable.

*Reference:* FOR-2006-10-11-1147; LMD (Landbruks- og matdepartementet); Avd. for matpolitikk

**Russia:** Dimethyl dicarbonate (DMDC, Velcorin®) is approved for use as processing aid in alcoholic drinks in accordance with Sanitary Standard SanPiN 2.3.2.1078-01 and 2.3.2.1293-03.

*Reference:* Federal Agency for control on customers' rights protection and public wellfair

Nr. 77.99.26.9.U.3199.5.10 of 18.05.2010

**Switzerland:** Dimethyl dicarbonate (E242) is approved as a food additive in wine, sparkling-wine, liqueur wine and grape-must at a maximum use level of 200 mg/kg ingoing amount. Residues must not be detectable.

*Reference:* Addition 7 D. Application list Number 35.01 of the decree about approved food additives ZuV; SR 817.022.31

America:

**USA:** Dimethyl dicarbonate is approved as food additive according to 21 CFR 172.133 (b) (1) with a maximum use level of 200 ppm in wine, de-alcoholised wine and low alcohol wine under the following conditions:

- the use is limited to "normal circumstances of bottling, canning, or other forms of final packaging";
Argentina: Dimethyl dicarbonate is approved for microbiological stabilization of bottled wines; max. dosage allowed: 200 mg/l.

Reference: INSTITUTO NACIONAL DE VITIVINICULTURA
RESOLUCION N° C.35/09

Chile: DMDC is used in wine for microbiological stabilization of wines with residual sugar and prevent development of undesired yeast and lactobacterias, max. dosis allowed: 200 mg/l. The use is according to OIV 3.4.13

Reference: Government of Chile, Agriculture and Livestock Department SAG, Official letter, June 16, 2005

Colombia: The use of Dimethyl dicarbonate in wine in Colombia is approved. The use of Dimethyl dicarbonate, whenever all parameters described in Codex Stan 192-1995 (Rev. 5-2004) are fulfilled, specifically what concerns to maximum doses allowed (250 ppm) in the products categorized with codex with items 14.1.4, 14.1.5, 14.2.2, 14.2.3, 14.2.4 and 14.2.5 in table one from “Codex general Standard for Food Additives”.


Peru: The use of Dimethyl dicarbonate is permitted in Peru accordant to Codex Alimentarius ruled by Dirección General de Salud Ambiental.

Reference: Reglamento sobre Vigilancia y Control Sanitario de Alimentos y Bebidas
DECRETO SUPREMO Nº 007-98-SA

Venezuela: Velcorin is registered as a Processing Aid in the territory of the Bolivian Republic of Venezuela accordant to Codex Alimentarius

Asia:

Indonesia: Any wine importer can import Velcorin treated wine into Indonesia without extra approval.

Reference: BADAN POM Nomor: PO.03.02.5.1565

Israel: According to the Ministry of Commerce and Industry and the National Wine Expert Committee Dimethyl dicarbonate (DMDC) may be used in wine as long as the final methanol level in the wine product will not exceed 300 mg/l.


Philippines: Dimethyl dicarbonate may be used as a preservative in cider and perry, wines (other than grapes) at a maximum use level of 250 mg/kg, grape wines and mead at a maximum level of 200 mg/kg.

Reference: Republic of the Philippines - Department of Health – Bureau of Food and Drugs (provisional approval, dated 23-SEP-2004)

Australia / New Zealand

Dimethyl dicarbonate (INS: 242) is permitted as a processing aid for use in:

- Wine, sparkling wine and fortified wine with a max. permitted (use) level of 200 mg/kg
- Fruit wine, vegetable wine and mead (including cider and perry) with a max. permitted (use) level of 200 mg/kg

Dimethyl dicarbonate must not be present in the food as sold.

Amendment No. 121 to Food Standards Code, Part 1.3 - Substances Added to Food, Standard 1.3.3 Processing Aids (Tabe to clause 19) as gazetted in Australia (No. FSC 63, 10 February 2011) and published in the New Zealand Gazette
Africa:

**Algeria:** Dimethyl dicarbonate is approved as a food additive in grape wines at a maximum used level of 200 mg/kg and in wines (other than grapes) at a maximum use level of 250 mg/kg and

Reference: Algeria, N° 194/MC/DQC/06; 09. Dec 2006

**Nigeria:** Dimethyl dicarbonate is approved as a food additive in grape wines at a maximum used level of 200 mg/kg and in wines (other than grapes) at a maximum use level of 250 mg/kg and

Reference: National Agency For Food And Drug Administration And Control NAFDAC/R&R/Codex 63/Vol. II; 16th October 2006

**South Africa:** Dimethyl dicarbonate may be added to wine, alcoholic fruit beverage, grape-based liquor, spirit-based liquor. The maximum used level is in compliance with OIV OENO 5/2001 200 ppm.

Reference: Liquor Products Act, Act 60 of 1989

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