



VpCI ADDITIVES FOR COATINGS, FLUIDS, ADHESIVES AND PLASTICS



M-138/M-138 C

PRODUCT DESCRIPTION

Cortec® M-138 and M-138 C are Volatile Corrosion Inhibitor (VCI) powder masterbatches for use in the Rubber and Sealant Compounding Industry. Corrosion protection for multimetal parts, either in contact or in close proximity to rubber rollers, gaskets or manufactured parts is a major problem that is often solved only by use of environmentally unfriendly coatings or expensive alloys. Cortec® M-138 and M-138 C are powdered compounds that can be added in low concentrations to rubber formulations to solve these basic problems. M-138 C is designed for applications involving aluminum and cast iron. It should not be used when copper is present. A finished rubber part can contain both a contact corrosion inhibitor and an emitting source for VCI chemistry. These products open up new design and cost saving solutions to industry and manufacturing process, and to anyone that has had problems with metallic components in contact with elastomers.

BACKGROUND

Historically, elastomeric compounds have shown a tendency to cause corrosion to metal parts from direct or indirect contact. Examples are idled or driven rollers in close proximity to metal parts in office machines. To solve this problem, expensive metal alloys or environmentally unfriendly metal coatings have been used. Relief of this problem would reduce costs and allow improved design features for this industry.

Similar corrosion problems have been associated with gaskets and rubber molded parts in the automotive industry. Corrosion protection is usually expensive and/or environmentally unfriendly. Solutions have escaped most designers. The General Motors Research Procedure (GMRP) is a test procedure designed to measure the degree of corrosion protection in direct contact between elastomeric gaskets and steel blocks. Table 1 gives the results of adding M-138 to three different elastomeric compounds.

GMRP Corrosion Test Results After 14 days @ 125°F (52°C)

| | GM Corrosion Rating |
|---------------------------------|---------------------|
| Nitrile (control) | 1.5 |
| M-138 (5%) | 0 |
| Natural Rubber (control) | 1 |
| M-138 (1%) | 0 |
| M-138 (3%) | 0 |
| M-138 (6%) | 0 |
| EPDM (control) | 1.5-2 |
| M-138 (1%) | 0 |
| M-138 (2%) | 0 |
| M-138 (5%) | 0 |

PRODUCT APPLICATION

In most cases, a trial run of a particular rubber compound is suggested. The powder is added to the elastomeric material at the compounding stage along with the other additives. The addition of M-138 or M-138 C to the rubber formulation will not typically change the physical properties of the molded rubber.



FEATURES

- Provides multimetal corrosion protection to finished products
- Allows addition of VCI compounds at the compounding stage
- Provides true VCI emitter properties to finished rubber products
- Gives greater design freedom in choice of materials
- Reduces the cost of corrosion protection for metal components
- Non-toxic and non-flammable additive
- Simplifies mix design for compounding of elastomers

TYPICAL PROPERTIES

M-138 and M-138 C

Appearance White to off-white powder
Non-volatile Content 95-100%

PACKAGING

Cortec® M-138 and M-138 C are available in 100 pound (45.5 kg) polyethylene lined drums. Store in a sealed container in a dry warehouse with temperature not exceeding 100°F (38°C). Under these conditions the shelf life is up to 2 years.

APPLICATIONS

- Rubberized coatings
- Elastomeric gaskets and sealants
- Steel belted radial tires
- Reinforced rubber hoses and belts
- Elastomeric parts and components
- Elastomeric membranes for auto roofs

FOR INDUSTRIAL USE ONLY

KEEP OUT OF REACH OF CHILDREN

KEEP CONTAINER TIGHTLY CLOSED

NOT FOR INTERNAL CONSUMPTION

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

LIMITED WARRANTY

All statements, technical information and recommendations contained herein are based on tests Cortec Corporation believes to be reliable, but the accuracy or completeness thereof is not guaranteed.

Cortec Corporation warrants Cortec® products will be free from defects when shipped to customer. Cortec Corporation's obligation under this warranty shall be limited to replacement of product that proves to be defective. To obtain replacement product under this warranty, the customer must notify Cortec Corporation of the claimed defect within six months after shipment of product to customer. All freight charges for replacement products shall be paid by customer.

Cortec Corporation shall have no liability for any injury, loss or damage arising out of the use of or the inability to use the products.

BEFORE USING, USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR ITS INTENDED USE, AND USER ASSUMES ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH. No representation or recommendation not contained herein shall have any force or effect unless in a written document signed by an officer of Cortec Corporation.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. IN NO CASE SHALL CORTEC CORPORATION BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.



4119 White Bear Parkway, St. Paul, MN 55110 USA
Phone (651) 429-1100, Fax (651) 429-1122
Toll Free (800) 4-CORTEC, E-mail info@cortecvci.com
Internet <http://www.cortecvci.com>

Distributed by:



OTiK Sp. z o.o.

ul. Hutnicza 4
81-061 Gdynia
tel.: 58 6230498
fax: 58 6230496

otik@use.pl

www.inhibitory.use.pl



printed on recycled paper  10% post consumer

Revised 10/23/98. ©Cortec Corporation 1998. All rights reserved. Supersedes: 6/11/98.