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# *Evaluating VapourSeal Emitter for Corrosion Inhibition*

**Background:** Brian Coles/Lake Chemicals submitted a VapourSeal emitter to Cortec Corporation. The emitter is in the shape of a small tin can, with a diameter of 1.25", and thickness, 0.50". Removing the lid from the can exposes a cushion/fabric material.

**Purpose:** Evaluate the corrosion inhibition of the VapourSeal emitter.

**Method:** $SO_2$ Test
Chromatography

**Materials:** $SO_2$ Test Kit
Chromatograph

**Procedure:** The above test was performed according to the standard procedure.

**Results:**

$SO_2$ Test

| Material | Amount of Corrosion (%) |
|---|---|
| Cortec VpCI-105 Emitter | 1.0-3.0 |
| VapourSeal Emitter | >90.0 |
| Control | >90.0 |

Photos attached

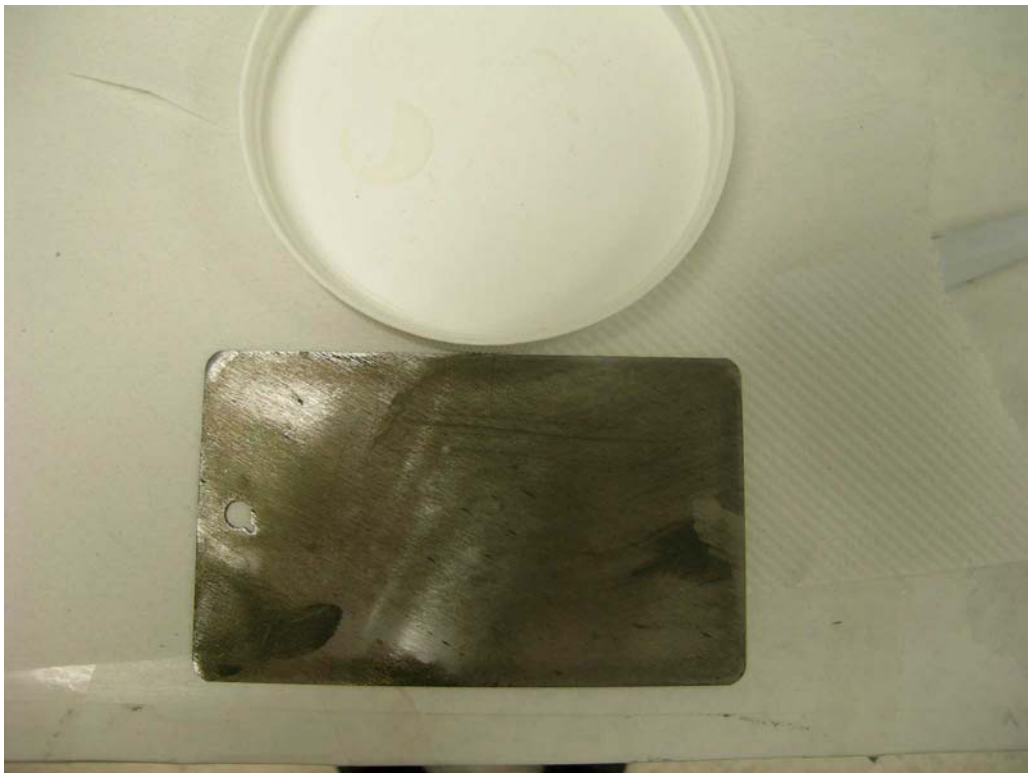
The Gas Chromatography showed that VapourSeal Emitter is amine-based product, which can't provide multi-metal protection to steel.

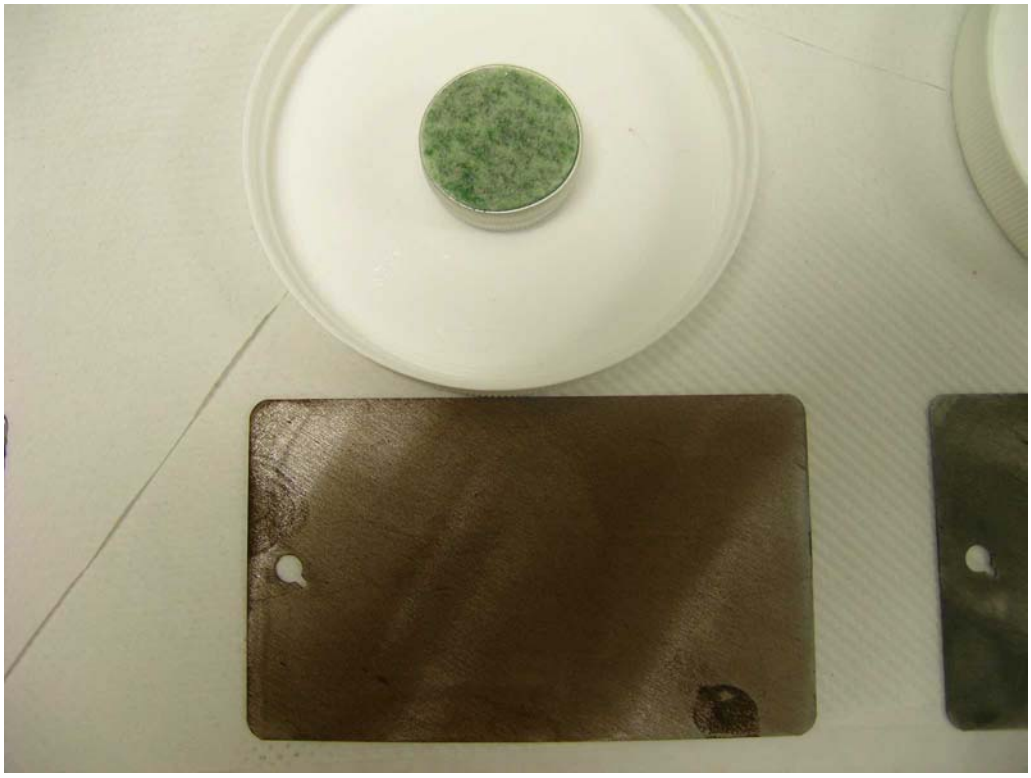
**Conclusion:** Cortec VpCI-105 emitter provided a much greater level of corrosion inhibition compared to VapourSeal emitter. This could be explained with a much better film forming properties of chemicals contained in VpCI-105 Emitters.

**Project #:** 04-185-1125

*$SO_2$ Grades (Grade 3 and 4 are passing):*
Grade 0- Extensive corrosion covering 25% or more of panel surface
Grade 1- Moderate corrosion covering 10-25% of panel surface
Grade 2- Slight corrosion covering 5-10% of panel surface
Grade 3- Very slight corrosion covering 0-5% of panel surface
Grade 4- No visible corrosion on panel surface


CORTEC
CORPORATION
VpCI®-105 Emitter
Vapor phase Corrosion Inhibitor
NSN 6850-01-406-2060
FDA Approved
Provides protection for all metals
DO NOT REMOVE OR
PUNCTURE THIS MEMBRANE
Patented





04-185-1125

MATERIAL SAFETY DATA SHEET

## 1.0 IDENTIFICATION

1.1 Product Name: **VapourSeal**

1.2 Supplier: **Enginewise**

3 Venture Business Park
Gilbey Road, Grimsby, DN31 2UW
Tel: +44 (0) 1472 347400
Fax: +44 (0) 1472 267647
E-mail: info@enginewise.co.uk

## 2.0 COMPOSITION/INFORMATION ON INGREDIENTS

Amine soap of Carboxylic acid (in the felt within the aluminium container).

## 3.0 HAZARDS IDENTIFICATION

Not classed as dangerous for supply. May cause irritation to skin and eyes. Vapour may be irritant to respiratory tract (especially if heated). Combustible.

## 4.0 FIRST AID MEASURES

| | | |
|---|---|---|
| 4.1 | Inhalation | Remove from exposure. |
| 4.2 | Skin Contact | Wash with soap and water. Remove any contaminated clothing. |
| 4.3 | Eye Contact | Flush with water for several minutes. Seek medical assistance. |
| 4.4 | Ingestion | Do not induce vomiting. Consult physician. |

## 5.0 FIRE FIGHTING MEASURES

Foam, $CO_2$, dry powder. DO NOT USE WATER JETS.
Water fog may be used to cool containers.
Combustion may release undefined organic compounds.
Wear breathing apparatus if necessary.

## 6.0 ACCIDENTAL RELEASE

6.1 Wear oil resistant clothing and safety glasses if there is any risk of splashes.
6.2 Absorb onto earth, sand or similar and dispose of in an approved and permitted way.
6.3 Prevent entry into sewers and waterways.

## 7.0 HANDLING AND STORAGE

| | |
|---|---|
| 7.1 Handling | Avoid contact with eyes and skin. |
| 7.2 Storage | Maximum recommended storage temperature 25°C.<br>Store in steel or other suitable container.<br>Storage life essentially indefinite under normal conditions. |

## 8.0 EXPOSURE CONTROL/PERSONAL PR0TECTION

| | |
|---|---|
| 8.1 Hand & Body protection | Oil resistant gloves and apron or other suitable protective clothing. |
| 8.2 Eyes | Unlikely if kept in VCI container. Protective safety glasses. |
| 8.3 Other | DO NOT BREATH FUMES OR SPRAY. |

## 9.0 PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| 9.1 | Appearance | Green liquid. |
| 9.2 | Odour | Mild ammoniacal |
| 9.3 | pH | Aqueous dispersion 7-9 units |
| 9.4 | Boiling Point/Range | n/a |
| 9.5 | Melting Point/Range | n/a |
| 9.6 | Flash Point | 90°C minimum |
| 9.7 | Flammability | Combustible |
| 9.8 | Autoflammability | Not known |
| 9.9 | Explosive Properties | None |
| 9.10 | Oxidising Properties | None |
| 9.11 | Vapour Pressure | n/a |
| 9.12 | Relative Density | 0.98-1.0 |
| 9.13 | Solubility | Dispersible with water. |
| 9.14 | Viscosity (20*C) | n/a |

## 10.0 STABILITY AND REACTIVITY

Stable unless overheated.
Avoid open flames.
Thermal decomposition will release undefined organic compounds.
Incompatible with strong oxidising agents.

## 11.0 TOXOLOGICAL INFORMATI0N

| | | |
|---|---|---|
| 11.1 | Inhalation | Slightly irritant to respiratory tract. Could cause nausea and dizziness. |
| 11.2 | Skin Contact | Prolonged or frequent contact could cause irritation and may lead to dermatitis. |
| 11.3 | Eye Contact | Irritant |
| 11.4 | Ingestion | Unlikely unless deliberate but could cause gastro-intestinal irritation. |
| 11.5 | Long-term Exposure | No substantial ill effects established from general usage. |

## 12.0 ECOLOGICAL INFORMATION

No direct information but not expected to be dangerous to the Environment.
Likely to be slowly biodeqradable.
Does not contain any substance classed as 'Dangerous for the Environment'.

## 13.0 DISPOSAL

13.1 In accordance with national and local regulations.
13.2 Prevent from entering sewers and waterways.

## 14.0 TRANSPORT INFORMATION

Not classed as hazardous for transportation.

## 15.0 REGULATORY INFORMATION

Not classed as hazardous for transportation.

## 16.0 OTHER INFORMATION

These data are presented in good faith and are believed to be accurate. However it is for users to satisfy themselves as to the suitability of the product for their application.

Sources of information used in the compilation of this document include manufacturers' Material Safety Data Sheets, CHIP Approved Supply lists, Codes of Practice and Guidance Notes.

line-by-line, to the final published Paper #04416. Other than minor grammatical modifications, the final paper was identical to the original draft.

- As well as being upset about the paper being presented unchanged, Mr. Miksic is very upset that he received no acknowledgment of any sort on his review. This is despite he and other staff at Cortec spending many hours of review and sending a comprehensive and critical review letter.

- Review of Technical Program Manual – "Paper Review"

    - Section 2 : Symposium chairs have the primary responsibility of determining the quality of each paper in the symposium.

    - Section 3 : The Chair of the sponsoring technical committee appoints the additional reviewer..... All papers must be reviewed by no fewer than TWO reviewers... Both the Chair and the reviewer must send approval notification to NACE.

    - Section 6 : The Symposium Chair must assume the responsibility of rejecting any paper that he/she AND the reviewer believe is not worthy of being presented...

- ACPC Meeting at Corrosion Technology Week (September 13th, 2004)

    Pierre Crevolin explained in further detail the nature of this complaint, and the Committee agreed that at minimum, there appears to be a breakdown in proper lines of communication.

    Further discussion related to the need for symposium chairs and reviewers to be totally knowledgeable as to all aspects of responsibilities in the review process as outlined in the Technical Program Manual. There are two main areas of compliance required, technical merit and format, for which both reviewers now take joint responsibility. Arising from the discussion at this meeting, in practice, the appointed reviewer normally interprets their primary role to be that of reviewing technical merit. The current Technical Program Manual is ~22 pages in length, and perhaps some very critical responsibilities should be hilited in some format.

**Further Action required**

As of September 21st, Pierre Crevolin is no longer the Interim Executive Director. In handing over all responsibilities to the new Executive Director, Ralph Pontillo, it was left that Crevolin would bring all information up to date to present to ACPC. Arising from all information available and discussions at the above noted ACPC meeting, a summary of outstanding issues is as follows :

- To whom did Boris Miksic send the original review? We know a copy was sent to Cindy Euton at NACE Headquarters.
- Did the Symposium Chair receive a copy of the Boris Miksic review?
- If the Chair did not receive the review in question, did he assign an alternate reviewer on his own?

Once these last items are clarified, it is left to ACPC to take action (if any) on this matter.

Respectfully Submitted,

Pierre Crevolin