

Evaluation of Competitor Film

Background: Samples of Daubert CP 2000 and Daubert CP 3000 film were submitted to Cortec's laboratory for comparison testing and identification. Due to the fact that the two samples were not differentiated at arrival in the lab, they were tested simply as Roll A and Roll B.

Purpose: Perform comparison testing of the Cortec VpCI™-126 film

Materials: Panels (Carbon Steel)

VIA Test Kit

Razor Blade Test Kit

Paragon 1000 FT-IR, Perkin Elmer

EM Quant NO₂ Test Strips, EM Ind., Gibbstown, NJ

(charge/Lot #90397041, Sept 02)

Methods: VIA Test

Razor Blade Test

FT-IR Spectroscopy

NO₂/NO₃ Test

Procedure: The above tests were performed according to standard procedure for each.

Results:

	Razor Blade Test on Carbon Steel		
Material	Panel #1	Panel #2	Panel #3
VpCI™-126 (Cortec)	Pass	Pass	Pass
Roll A	Fail	Fail	Fail
Roll B	Fail	Fail	Fail
Control	Fail	-	-
	VIA Test		
Material	Panel #1	Panel #2	Panel #3
VpCI™ —126	Grade 3	Grade 3	Grade 2

(Cortec)			
Roll A	Grade 1	Grade 0	Grade 2
Roll B	Grade 0	Grade 0	Grade 1
Control	Fail	-	-

Note: See attached photographs

VIA Grading System (2 or 3 is passing):

Grade 0- No corrosion inhibiting effect

Grade 1- Minute corrosion inhibiting effect

Grade 2- Medium corrosion inhibiting effect

Grade 3- Good corrosion inhibiting effect

FT-IR Spectroscopy: According to the acquired spectra, there are very little, if any, traces of inhibitor in the film.

NO₂/NO₃ Test: The submitted films do not contain nitrites.

Conclusions:

1. According to the above results, the Daubert film does not offer contact corrosion protection.
2. According to the above results, the Daubert film does not offer vapor corrosion protection.
3. The film contains little, if any, inhibitor.
4. Cortec VpCI™-126 film provides superior corrosion protection.
5. Similar FT-IR spectra have proven that one of the film samples was evaluated in 1997.

Estimated Cost of Project: \$250.00

Project #: 01-163-1125

**SODIUM NITRITE, 5.1, UN1500, PGIII, OXIDIZER/TOXIC
98 %-120 MESH**

Lot No: **NANI-03-171**

RQ: 100(45.4)

Net Wt. **50 LBS.**

CAS#: 7632-00-0

RTECS#: RA 1225000

FW: 69.00

MERK INDEX: 9,8407

Emergency Contact: **CHEMTREC: 1-800-424-9300**

CHEMTREC INTERNATIONAL: (703) 527-3887

HEALTH HAZARDS & FIRST AID:

MATERIAL IS DANGEROUS IF INHALED! IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNT OF WATER, FOR AT LEAST 15 MINUTES IN CASE OF CONTACT EXPOSURE. MATERIAL IS IRRITATING TO THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. EXPOSURE SYMPTOMS MAY INCLUDE - BURNING SENSATION, COUGHING, WHEEZING, SHORTNESS OF BREATH, HEADACHES, LARYNGITIS, NAUSEA AND VOMITING, DIURESIS, ANEMIA, METHEMOGLOBINEMIA, NEPHRITIS, GASTROENTERITIS AND VASODILATION. IF MATERIAL HAS BEEN INHALED, REMOVE SUBJECT TO FRESH AIR. IF SUBJECT IS NOT BREATHING GIVE ARTIFICIAL RESPIRATION - PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT OXYGEN SHOULD BE SUPPLIED. CONTAMINATED CLOTHING SHOULD BE REMOVED AND THOROUGHLY CLEANED BEFORE REUSE. CALL A PHYSICIAN! WASH THOROUGHLY AFTER HANDLING.

INCOMPATIBILITIES: ACIDS, ACID ANHYDRIDES, FUELS, (REDUCING AGENTS). EXPLOSIVE MIXTURES MAY RESULT FROM IMPROPER HANDLING!

PRODUCTS OF DECOMPOSITION: OXIDES OF SODIUM AND NITROGEN.

HANDLING & STORAGE: APPROPRIATE OSHA/MSHA APPROVED RESPIRATOR, CHEMICALLY RESISTANT GLOVES, CHEMICAL GOGGLES AND OTHER APPROPRIATE PROTECTIVE CLOTHING (RUBBER APRON OR OVERWEAR) SHOULD BE WORN. MECHANICAL EXHAUST IS REQUIRED. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. DO NOT BREATHE DUST. AVOID PROLONGED AND REPEATED EXPOSURE. HYGROSCOPIC. KEEP CONTAINERS SEALED. STORE IN COOL DRY PLACE. OBSERVE PROPER PERSONAL HYGIENE. SAFETY SHOWER SHOULD BE AVAILABLE. THE PREFERRED FIRE EXTINGUISHING MEDIA IS WATER, DRY CHEMICAL POWDER, CARBON DIOXIDE OR POLYMER FOAM. MATERIAL IS NONCOMBUSTIBLE. PROTECT ADJACENT AREA!

***** INDUSTRIAL OR MANUFACTURING USE ONLY *****

