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Evaluation of VpCI SuperPenetrant vs. PB Blaster and CRC Freeze-Off Super Penetrant

Background: Customer is looking for the best product on the market to private label.

Purpose: To evaluate the penetrating properties of VpCI SuperPenetrant vs. PB Blaster and CRC Freeze-Off Super Penetrant.

Materials: VpCI SuperPenetrant.
PB Blaster
CRC Freeze-Off Super Penetrant
Metal Panels (Carbon Steel SAE 1010)
Iron Oxide Powder
Pipettes

Method: Crevice Penetration
Wetting Properties
Iron Oxide Penetration

Procedure:

1. Crevice penetration was evaluated as follow. Two cleaned with Methanol steel panels were placed above another one the flat surface and the penetrants were applied onto lower panel and their crevice (See attached photo Fig. 1 and 2). The level of penetration after 5 and 10 minutes were measured.
2. Wetting properties were studied as follow. 0.3 ml of product was applied on the steel panel and covered surface area was measured and photographed. (see Fig. 3)
3. Penetration through the Iron oxide was evaluated. 5 g of Iron oxide powder was placed into the testing tubes. Testing tubes were tapped against the rubber panel to compact the powder. 1.5 ml of penetrant was added to the tube and the level of penetration in 30 min and the time of complete penetration were recorded. (Fig. 4)



Results:

Penetrants	Crevice Penetration		Wetting Properties		Iron Oxide penetration	
	After 5 min., cm	10 min., cm	10 min., cm ²	1 hour, cm ²	After 30 min, mm	Time to complete, hours,
PB Blaster	4.5	4.5	1.5x2.3*	2.4x3.8	2.0	> 96
CRC	6.3	7.4	3.1x4.2	4.3x5.3	1.6	2.5-4
VpCI SP	5.7	11.5	2.6x4.1	5.0x7.9	2.8	1.5-3

* When PB Blaster is applied onto metal the very noticeable separation of carrier (solvent) and differently colored active ingredient occurs. While carrier is spreading on the surface of the panel, the active ingredient separates and its wetting angel is very high, it forms the round drop. See attached picture. The system is acting as two parts with very different surface tension.

Conclusion: According to the test results VpCI SuperPenetrant over performed PB Blaster and CRC Freeze Off SuperPenetrant.

- shows deeper penetration through the crevices and in-between metal surfaces
- covers a larger surface area of metal when the same volume is applied
- faster and deeper penetration of the iron oxide layers

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Fig. 1



Fig. 2

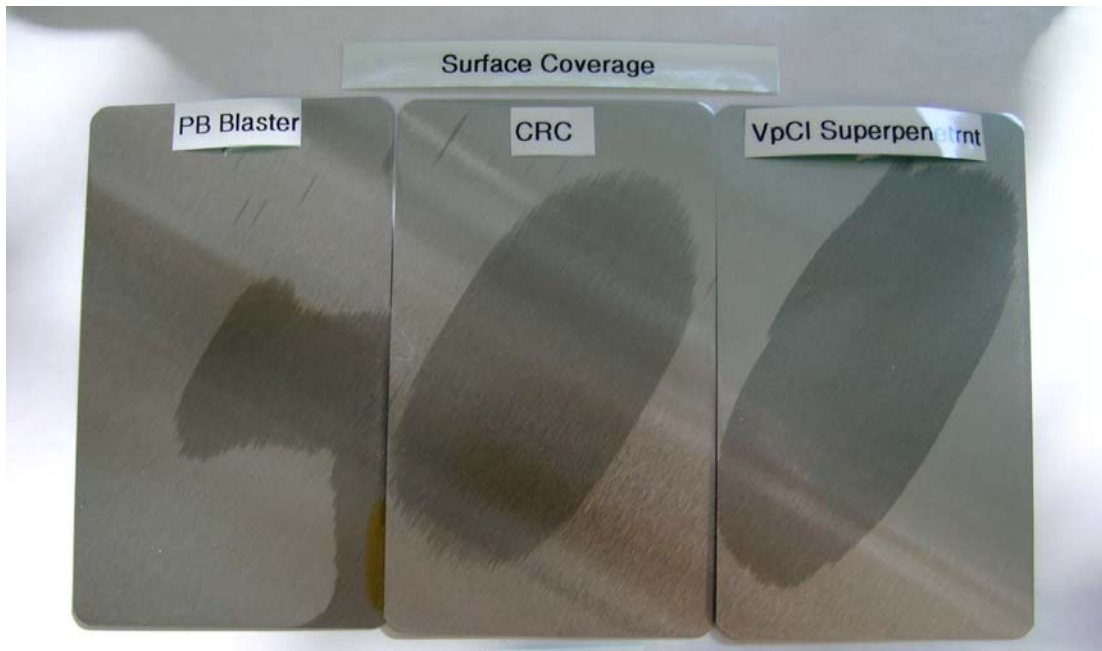


Fig 3



Fig. 4