

For Immediate Release

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**International Packaging Team Puts the Brakes on Corrosion
for Major Automaker**

(Dandenong South, Australia and Alsip, IL) -- From the moment an automobile leaves an assembly line, exposed metal parts become susceptible to corrosion. During road testing, loading and the long journey to the showroom, automobiles come into contact with moisture, dirt and other corrosive elements. When that voyage includes an ocean crossing, the risk increases.

The Problem: Damage caused by corrosion on brake assembly surfaces and inside the drum during transport.

The Solution: A rigid plastic shell that allowed for normal transport operation, yet created a physical and chemical barrier against corrosion.

Corrosion on exposed metal such as brake assemblies is a common concern for auto manufacturers. That's why Holden, GM's major Australian-based automaker, contacted corrosion packaging specialist Australian Inhibitor to come up with an effective brake assembly solution for its Commodore vehicle line.

Holden had previously worked with Australian Inhibitor in 2004 to develop corrosion-preventive wheel protectors for its HSV Monaro models during export to the US. The performance success of Australian Inhibitor's unique VCI-treated wheel protector product, and its proven ability to adapt in the global auto industry, gave Holden reason to call on them again in 2006.

In that project, Australian Inhibitor helped a Holden assembly plant protect its engines against corrosion during overseas shipment. The

issue was that water coolant used to test the engines could not be totally drained before being packaged for shipment, creating an environment that could lead to corrosion on the clutch and flywheel. Australian Inhibitor spent 6 months to develop an elliptical rigid plastic case incorporating volatile corrosion inhibitors (VCI) from Daubert Cromwell, its long-time US supplier. The final product's function and performance met all Holden's requirements, plus earned Australian Inhibitor two international awards for technical innovation and industrial packaging.

That patent-pending design has been adapted into a new generation of rigid plastic VCI, called Ferro-Form, now used to protect Holden model rotor and caliper covers. The design accommodated several unique requests, namely:

- *Ability to road-test the brake with the cover in place.* The vacuum-formed shape custom-fits the cover to the equipment snugly, without falling off.
- *Ability to be removed without tools or additional labor.* The shape is notched, so it can be torn off easily and without tools.
- *Brand identification.* The die was built with the Holden insignia in the center, so it is immediately recognized, and permanent.
- *Physical barrier against dirt, moisture and contaminants.* Australian Inhibitor tested a range of specialized plastics before choosing one that met all the conditions of vacuum-form manufacturing, plus the customer's cost and performance issues.

- *Prevent metal from corroding while in transit.* Daubert Cromwell is recognized as “The leading name in corrosion prevention®”, and Australian Inhibitor has been working with Daubert Cromwell products with a long term relationship spanning 50 years. The more complex issue in the Holden project was finding the right plastics technology that would allow the VCI to be released at a controlled rate and form an effective barrier on brake assemblies.

“The biggest challenge was coming up with a rigid plastic that would allow for VCI to ‘breathe’ onto the brake assembly and form that ideal chemical barrier,” explained Les Amy, General Manager at Australian Inhibitor. “The plastic shell also had to be designed to fit over the rotor and caliper, allow for normal braking and speeds of up to 100 kilometers during road tests, and be easy to put on and take off.”

“Our teams worked together to devise a solution that leveraged our unique plastics technology with their corrosion-inhibiting VCI chemistry,” Amy continued. “We came up with just the right combination of physical and chemical protection that would work together to totally protect wheel assemblies during transport of the Holden Commodore.”

Ferro-Form covers and automotive assembly protectors are now part of the Daubert Cromwell product line, in addition to the VCI films, papers, films, liquids and emitters it supplies to all major automotive OEMs and their suppliers. Sales representatives are strategically positioned in key locations throughout the U.S, Europe, Mexico, China, India and elsewhere to support the requirements of automotive assembly plants and wherever they need protective packaging.

For complete information, call Daubert Cromwell in Alsip, IL, at 800-535-3535; 708-293-7750; or send an inquiry to info@daubertcromwell.com.

“This is a creative solution that delivers innovative protection for a serious automotive transportation risk.”

-Les Amy