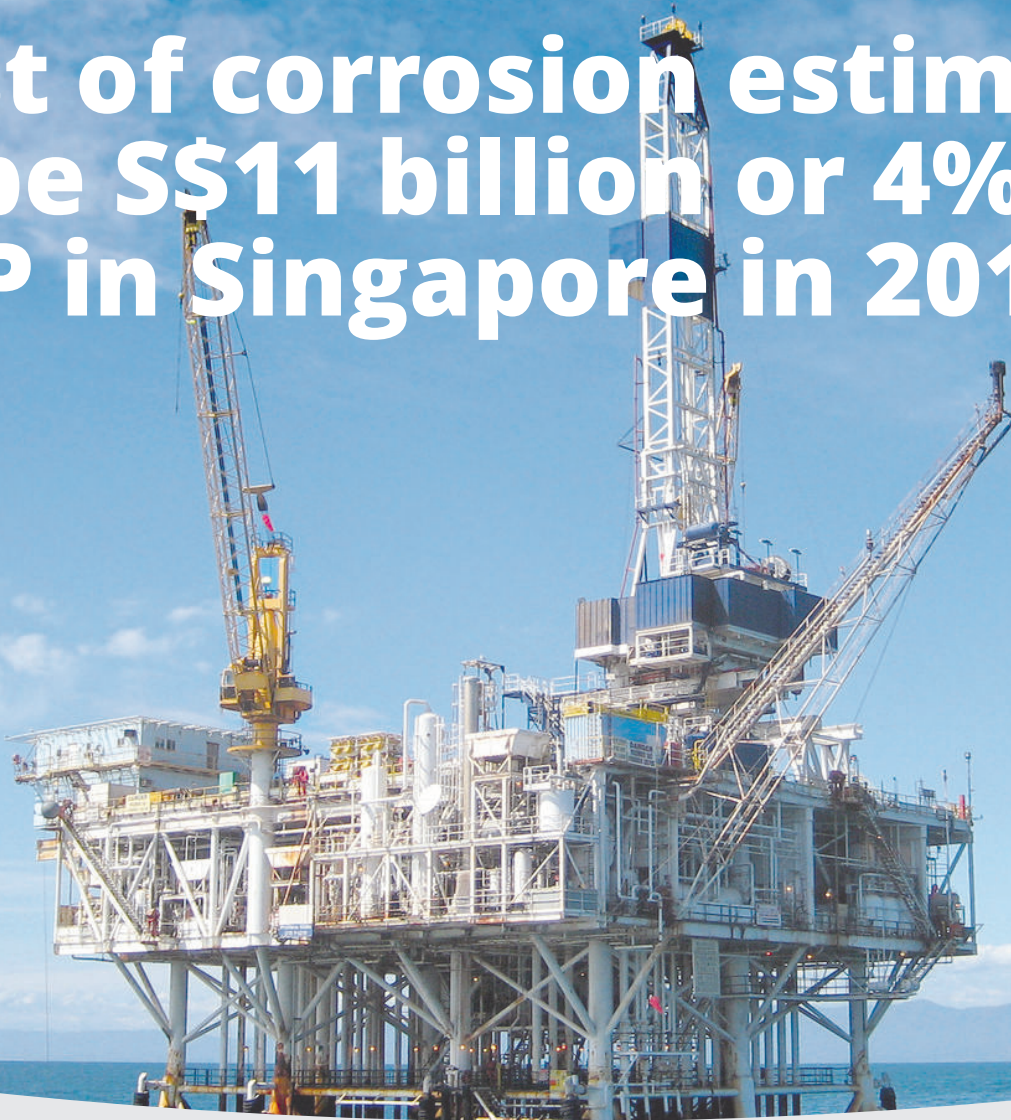


INDUSTRY CHALLENGES

Cost of corrosion estimated to be S\$11 billion or 4% of GDP in Singapore in 2013



Introduction

In Singapore the annual corrosion costs amount to more than 4% of GDP. Due to its widespread occurrence, corrosion affects almost industrial sectors. (A*STAR- SMIT Singapore Institute of Manufacturing Technology- 19th June WORKSHOP ON CORROSION PERFORMANCE EVALUATION WITH FIELD AND LAB TESTING PROTOCOLS)

A good understanding of the nature of corrosion together with proper prevention and packaging practices is imperative to save a significant percentage of corrosion costs.

Using the right packaging materials during shipment or storage of finished products by

manufacturers in Singapore is of paramount importance to reduce the rejects due to corrosion.

Vapro 826S VCI Shrink film was developed to protect both ferrous and non-ferrous metals against corrosion, exhaustive essential corrosion test capabilities have been carried out on said product which can benefit our local industries tremendously.

The massive costs of corrosion, the high salinity and humidity environmental conditions of Singapore leads Magna International Pte Ltd to research and developed a biodegradable Vapour Corrosion Inhibitor (VCI) shrink film to protect local produce against corrosion

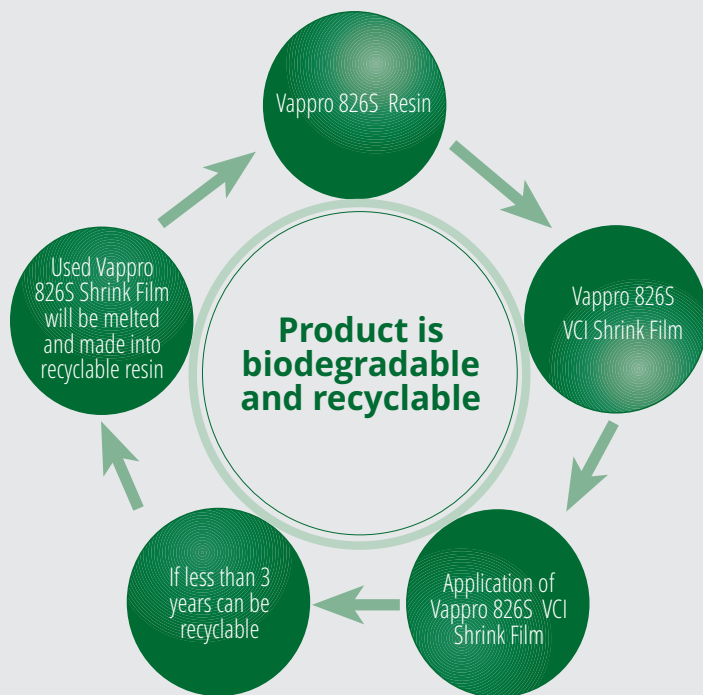
during shipment or storage.

The said product helps our local, MNCs manufacturers, and suppliers to reduce corrosion costs and eliminate risks of failure of their products due to corrosion. The costs of corrosion vary considerably from industry to industry; however, substantial savings are achievable in most industries if the right packaging materials are used.



INDUSTRY CHALLENGES

Solving Corrosion Problems with the Environment in Mind



Product Description

Vapro 826S is a significant breakthrough in protective packaging technology. It offers a new concept in product protection without the need for rust preventative coatings or oils. It was developed to solve corrosion problems with the environment in mind.

Vapro 826S offers protection for aluminum alloys and copper while providing excellent protection for ferrous metals, steel, and stainless steel.

Vapro 826S does not change critical electrical or mechanical properties of electronic or electrical components.

It is fortified with proprietary amine carboxylate salts and is made from OXO Biodegradable plastic, it is a polyolefin plastic with some metal salts added to catalyze the natural degradation process and to speed it up so that the OXO plastic will degrade resulting in microfragments of plastic and metal salts which will remain in the environment but will not be seen as a visual contaminant.

The degradation process is shortened from hundreds of years to years and/or months for degradation and thereafter biodegradation depends on the micro-organisms in the environment.

RoHS Compliance

We at Magna are well aware of the importance of developing products which are both the finest performers in their respective fields and yet, at the same time, environmentally-friendly. The European Union (EU) Directive on Restriction of Hazardous Substances (RoHS) restricts the use of harmful substances which may be detrimental to the environment and consumers. Magna has ensured that our products meet the Directive. Our products have been submitted for testing and certified by Bureau Veritas, an established organization specialized in QHSE (quality, health, safety and environment) management and certification. Magna is pleased to inform all our current and potential customers that our products are free of any of the restricted substances stated in the Directive (2002/95/EC), as according to the results.

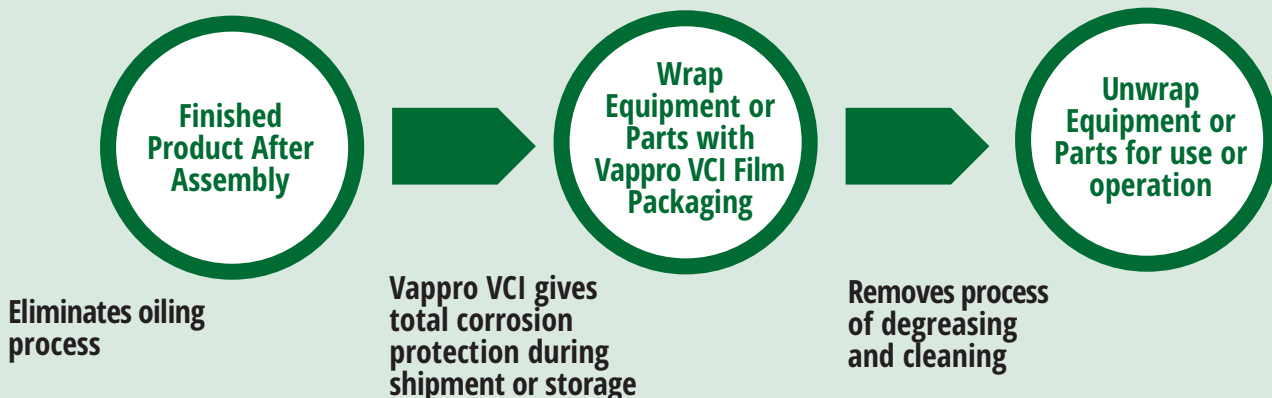


PRODUCT INFORMATION

Features & Benefits

- ✓ Multi-metal corrosion protection.
- ✓ UV Protection & Flame retardant properties.
- ✓ Extra strength & resistance to puncture and tear.
- ✓ High shrink force for broad application.
- ✓ Shrink wrap below the pallet not affected by forks.
- ✓ Extra protection for outdoor storage and export shipments.
- ✓ Six-sided protection is possible
- ✓ Immediate use of protected object (vehicle, equipment, etc.) upon removal.
- ✓ Vapro 826S fits more tightly around objects, reducing or eliminating wear and tear in windy conditions. The plastics can be welded together onsite through the use of the same handheld heat guns used to shrink the films, it offers barriers to water, dust, vermin and other contaminants.
- ✓ It protects metals both through direct contact and vapour action.
- ✓ It keeps the load secure and keeps out dust, dirt, moisture, and contaminants.
- ✓ It provides wide-width, heavy duty, outdoor barrier packaging.
- ✓ Faster and more cost-effective to store equipment outdoors than put it under-roof.

Cost Effective Total Corrosion Control with VAPPRO VCI





PROTECTIVE PACKAGING SOLUTION
VAPPRO 826S

NATO STOCK NUMBER: 6850-32-086-9421

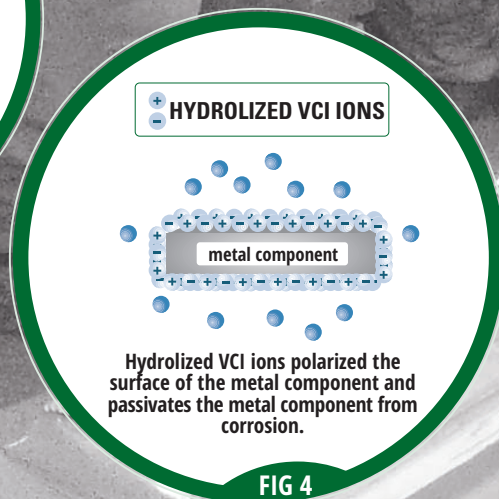
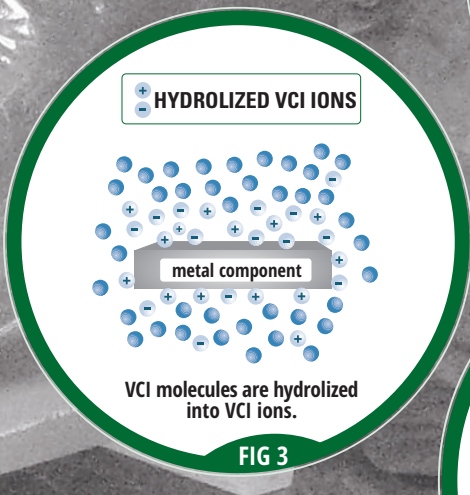
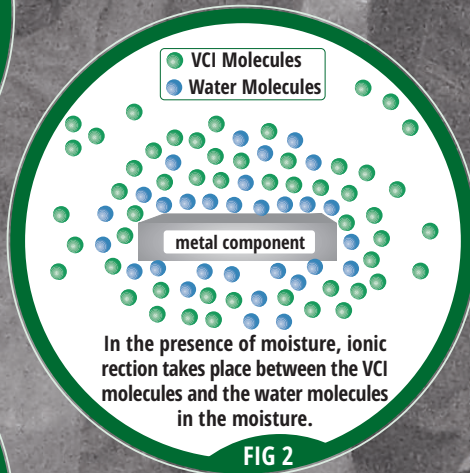
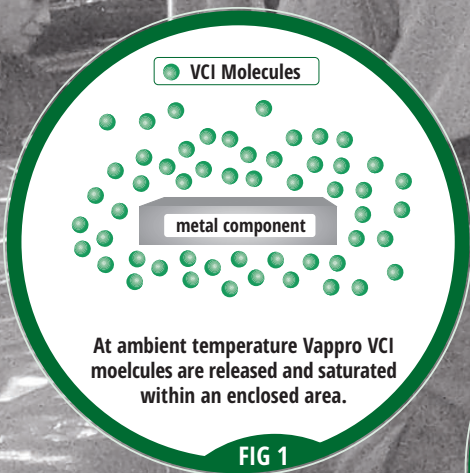
BIODEGRADABLE VCI SHRINK FILM

PROTECTION FOR MULTI-METALS

- ✓ Copper
- ✓ Cast Iron
- ✓ Aluminium Alloys
- ✓ Zinc
- ✓ Magnesium Alloys
- ✓ Brass
- ✓ Cadmium
- ✓ Silver
- ✓ Copper-Nickel Alloys
- ✓ Stainless Steel
- ✓ Carbon Steel
- ✓ Galvanized Steel
- ✓ Aluminized Steel

ADVANCED VCI TECHNOLOGY

How VAPPRO VCI works?



About VAPPRO technology

The Magna International Group of Companies developed the most advanced and environmentally safe VCI technology known. We call it "VAPPRO".

VAPPRO stands for Vapour-Phase-Protection, which is the foremost state-of-the-art technology in Corrosion Prevention available today.

VAPPRO's innovative VCI technology has earned the recognition and confidence of its customers world-wide; ranging from the electronics to the automotive industry; and from the packaging industry to the most prestigious computer industry.

VAPPRO's products conform to U.S. Military specifications. The superior quality, integrity and cost-effectiveness of our products has earned the company several major long term contracts in the military field around the world.

VAPPRO's international success can be accredited to the ingenuity and commitment of our research and development team. Their ongoing studies continue to create new products, while improving on existing ones, for this very competitive and demanding 21st century market.

Applications

- ▶ For Protection of Parts, components, and completed assemblies during shipping and Storage against corrosion.
- ▶ Tools, spare parts, and components.
- ▶ Bin and box liners.
- ▶ Motors and mechanical controls.
- ▶ Electrical equipment and controls.
- ▶ Long tubular products and pipe.

COMPANY INFORMATION

Magna group

Magna Canada
Regional Office

Magna International
Head Office

Magna Australia
Regional Office

INTRODUCTION

Magna Group of Companies consists of Magna International Pte Ltd, Magna Far East Pte Ltd, Magna Canada Inc, Magna Australia Pty Ltd and Magna Energy Pte Ltd. The Magna Group is one of the world's foremost leaders in the specialized fields of corrosion-preventive technology, specialty lubricants and cleaning surfactants. Since its incorporation in 1990, first starting out as a manufacturer and distributor of cleaning and maintenance chemicals, the Magna Group has now carved itself a niche in the area of specialty surfactants, lubricants and additives. The products of the Magna Group are marketed under the brands Vapro, Corpro and Lupromax.

Represented by distributors in more than thirty countries in the NAFTA Region, Asia Pacific and Europe, the Magna Group is continually reinventing itself to accommodate the ever-present changes in the chemical industry. We at Magna make use of the powers of innovation, science and technology to satisfy customers' requirements.

Magna has established itself as a brand of excellence. Over 180 products are listed in the NATO Master Cross Reference List (MCRL), with individually assigned NATO Stock Numbers for easy reference.

Magna's focus on technical expertise, operational excellence, and its range of practical yet environmentally-friendly products has netted us the certification of the ISO 9001:2000. Magna Group is committed to achieve our mission of improving the lives of consumers, satisfying the needs of customers, and continuing our contribution to the chemical



With company headquarters in Singapore, the Magna Group's in-house Research & Developments team has made milestone achievements in corrosion-preventive technology, water treatment chemicals, lubricants and specialty surfactants.

MAGNA INTERNATIONAL PTE LTD

Magna International Pte Ltd, an innovative chemical company that manufactures specialty chemical products, was incorporated in September 1992.

Our specialty chemical products are represented in 25 countries in the Asia Pacific Region and Europe.

MAGNA (FE) CHEMICAL PTE LTD

Magna (FE) Chemical Pte Ltd is a fast growing company that manufactures environment friendly, biodegradable products for a cleaner, greener, better tomorrow. It was incorporated in 8th August 1990 specializing in the blending and distribution of cleaning and maintenance chemicals.

Magna (FE) Chemical Pte Ltd is a registered contractor with the Ministry of Finance Expenditure and Procurement Policies Unit (EPPU), and Construction Industrial Development Board (CIDB).

Magna (FE) Chemical is currently supplying chemical products to Government Departments, Statutory Boards and various Government-Linked Companies. The factory is based at Enterprise Road, where both manufacturing and administrative functions are carried out. Research is also carried out in-house to create new chemical products and to improve existing products.



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PROTECTIVE PACKAGING SOLUTION
Advancing environmental friendly
corrosion control technologies

www.vapprovci.com



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