



- **About us:**

SUZHOU KEYSUN NEW MATERIALS TECHNOLOGY CO.,LTD is in the business of developing and using environmentally beneficial materials science to bring value added products and services to its customers.

With more than 10 years experience in VCI packing technology field, 12000 square meters new facility, our quality is very guaranteed. We have our own lab equipped with advanced test machines. We are working with Soochow University and Shanghai Electricity College to create new VCI products constantly.

Our belief is that development and innovation is the key to our success.



- All KEYSUN products have passed the RoSH and REACH test reports. The factory is strictly run according to ISO 9001. On 28.April.2016 year, the government has approved our application that we are going to be New Three Board company,a new type listed company in China.
We devote ourselves to providing perfect VCI packing solution to automotive industry, electronic industry, equipment, shipyards ,high speed rails and steel mills.
KEYSUN VCI products are widely recognized and trusted by users and can meet continuously changing economic and social needs. Our VCI packaging material is environmental-friendly, effective and easy to use.
- In the past decade, KEYSUN has supported more than 200 students in high school and donated 6000 books to elementary school. We believe we will continue to take our social responsibility to help and contribute to more people by creating more environmental-friendly VCI products.



- **Our vision:**
Develop quickly and harmonically: To be a expert and market leader in VCI technology field. To make KEYSUN a famous brand in world. To create more value for our workers and society constantly.
- **Our mission:**
We devote to offer our valuable customers a perfect anti-rust packing solution & a wonderful experience of our service.





Technical Data Sheet

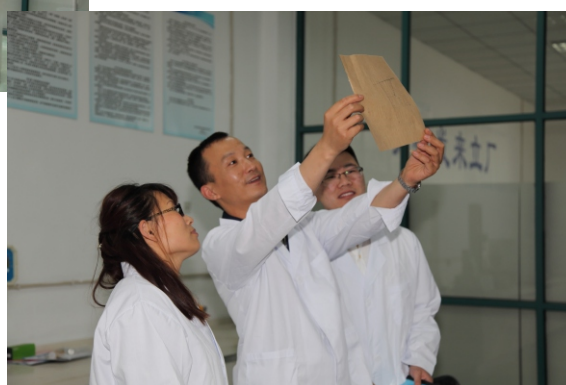
- KEYSUN Laboratory

A good laboratory is very important to guarantee the quality, so we have first class testing machines and equipment in our lab. More over, we have skilled workers.

Our principle is “ R&D is first” .

Vapors Inhibiting Ability(VIA), Contact Corrosion Test and Salt Spray Test, these three tests are necessary for each order. Also we inspect the SO₄²⁻, CL⁻ Ion detection, paper shrinkage, tensile strength, bursting strength and so on.

KEYSUN lab has designed a series of eco-friendly VCI products by cooperating with Soochow University and Shanghai Electric Power college.





Technical Data Sheet

• KEYSUN Culture

Company Aim: to look to the world, to make every effort to provide quality products at a reasonable price, so that customers around the world are satisfied.

Our mission:

We devote to offer our valuable customers a perfect anti-rust packing solution & a wonderful experience of our service.

Management Idea: To pursue the Material and spiritual well-being for our employees, meantime to contribute to the improvement of human being.

Our vision:

Develop quickly and harmonically: To be a expert and market leader in VCI technology field.

To make KEYSUN a famous brand in world. To create more value for our workers and society constantly.

Developing Idea: Keep moving on management, quality and innovation.





Technical Data Sheet

- **Cooperation with Universities**

Keysun always pays more attention to the improving of R&D ability, at the same time, we cherish the close relationship between university institutions and us. We hope to make full use of the advantages of both sides to form a joint force.

In 2015, KEYSUN signed a cooperation agreement with Soochow University.

In 2016, KEYSUN signed a technical cooperation agreement with the Shanghai Electric Power college.

Through combining theoretical training, R & D reserves of University and practical experience and testing capabilities of KEYSUN, we have made great achievements in the introduction of new products.





Technical Data Sheet

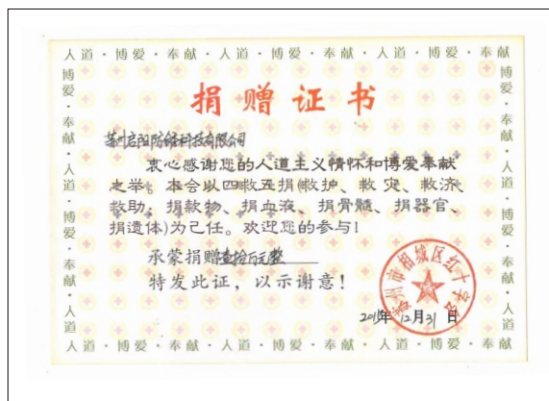
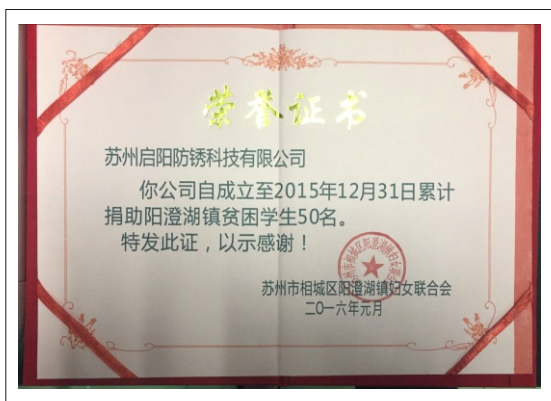
• KEYSUN Philanthropy

Suzhou Keysun helps more than 200 students with tuition fee.

Suzhou Keysun donates more than 6000 books to elementary school.

Suzhou Keysun was awarded the Social Responsibility Praise by the government.

Suzhou Keysun takes part in poor and remote districts charity activity.





Technical Data Sheet

- HOW DOES VCI WORK?

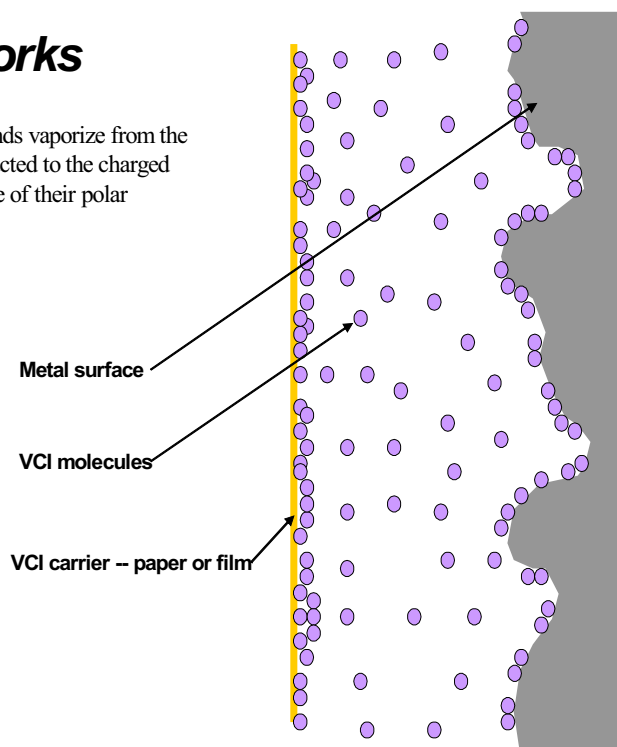
After the package is sealed, VCI fills the enclosed space, VCI molecules settle on all the metal surfaces and dissolve to form a thin layer. This process starts as soon as the package is closed and ends within a few hours.

As soon as the space is saturated with VCI vapors the process stops. After the package is opened the VCI material inside the film will evaporate and refill the space.

The VCI packaging performs even if the space is not fully sealed

How VCI Works

Corrosion inhibitor compounds vaporize from the paper or film. They are attracted to the charged surface of the metal by virtue of their polar orientation.





Technical Data Sheet

- We are serving the following corporations.



Das Auto.



Mercedes-Benz



BOSCH





Technical Data Sheet

VCI MASTERBATCH

- KEYSUN VCI MASTERBATCH additive is LLDPE based, white cut bead, that can be blended with many polyethylene resins (LDPE/ LLDPE/ HDPE / PP) to produce a range of anti-corrosion packaging systems like Blown Film / Molding / Stretch film. It is safe and does not require any changes in the manufacturing process.

KEYSUN VCI Master batch is environmental friendly and Nitrite free.

- Typical Physical Characteristics:**

- Appearance: white cut bead
- Carrier Resin: LDPE/LLDPE
- A little odor
- Temperature: =190
- Term of corrosion inhibition: more than 2 years



Types	Metals protect	Dosage
KEYSUN2100-1 KEYSUN2100-2	Non-ferrous metals	2%--4%
KEYSUN113-1 KEYSUN113-2	Ferrous metals	2%-4%
KEYSUN3100-1	VCI stretch film additive	2%-4%
KEYSUN3100-2	Copper&silver	2%-4%



- Packing:**

20kgs/Carton, 25kgs/Carton, 50kgs/Carton

- Storage & Shelf Life**

Storage: Store indoors at moderate temperatures 5-35 C. Keep packing closed and store away from heat sources, in dry and cool place.

Materials should be kept in original packaging or equivalent during storage Shelf Life: up to 18 or 24 months.





Technical Data Sheet

A

VCI GUSSET BAGS

• PRODUCT DESCRIPTION

Anti Corrosion VCI Gusseted bags are made with the latest polymer technology, and Impregnated in low temperature with vapor corrosion inhibitors (VCI's) to protect ferrous and most non-ferrous metals from corrosion. VCI Gusseted bags and box liners provide superior corrosion protection. VCI Gusseted bags protect metal parts against the corrosive effects of moisture, salt and other contaminants in storage or transit..



• Benefits

Heat sealable

Water resistant

Eliminate cleaning after storage

Provides safe* and effective VCI protection.

Recyclable

KEYSUN VCI BAGS are also available in a variety of forms such as: VCI Bag, VCI Zipper bags, VCI Gusset Bag, VCI heat Sealable Bag, VCI Recloseable Bag, VCI Antistatic bags, VCI Shrink bags, VCI Bubble bag, VCI Foam bags, VCI Wicketed bags Film and Custom Size Bags.

Metals protect:

Carbon steels, stainless steels, copper, brass, aluminum, silver, galvanized steel

Properties	Test method	Unit	4 Mil	5 Mil
Tear strength MD	ASTM D1004	PSI	2490	2850
Tear strength TD	ASTM D1004	PSI	2330	2790
Elongation MD	ASTM D882	%	740	870
Elongation TD	ASTM D882	%	935	1000





Technical Data Sheet

B

VCI GUSSET BAGS

- **Usage Guide:**

Wear gloves when operating in order to avoid corrosion caused by fingerprint.

Keep the wrapped metal parts dry and clean.

Keep the out packing sealed.

No repeat use.

- **Storage & Shelf Life:**

Storage: Store indoors at moderate temperatures 5-35 C. Keep packing closed and store away from heat sources, in dry and cool place.

Materials should be kept in original packaging or equivalent during storage Shelf Life: up to 18 or 24 months.

- **Applications VCI**

Packaging of spare parts (Automotive and industrial).

Packaging of components combining different materials

Seaworthy shipments.

Short term protection during production

Long term storage.



- **CAUTION:**

This technical data sheet is based on GB test method. All products manufactured by KEYSUN are warranted to be first class and free from defects in material and workmanship. Liability under this warranty is limited to the net purchase price of any of such products Proven defective or at our option to the repair or replacement of said products upon their return to us transportation prepaid.





Technical Data Sheet

KEYSUN VCI Film

- KEYSUN VCI Film provides cost-effective and versatile protection against corrosion damage for ferrous & non-ferrous metals in shipping and storage. It protects steel, iron, cast iron and its alloys. It is available in various sized rolls, sheets, tubing and bags. KEYSUN VCI film is made with super quality LDPE&LLDPE combining with KEYSUN Master batch.

Properties:

Film Thickness	-	4mil (102 μm)
Dart Impact Resistance	-	300 g
Tear Strength	MD	0.60 lb-f (2.7 N)
	TD	0.65 lb-f (2.9 N)
Tensile Strength at Yield	MD	1905 psi (13.1 MPa)
	TD	1538 psi (10.6 MPa)
Tensile Strength at Break	MD	3045 psi (21.0 MPa)
	TD	2917 psi (20.1 MPa)
Elongation at Break	MD	560%
	TD	610%
Breaking Factor	MD	11.0 lb-f/in (1926 N/m)
	TD	11.5 lb-f/in (2014 N/m)
Water Vapor Transmission Rate @78°F (26°C), 90% RH	-	0.06 g/(100 in ² /day)
Vapor Inhibiting Ability (VIA)	-	Pass

- Available colors are Blue, Yellow, Green, White clear & Pink. Additional colors are available upon request.
Standard thickness is from 0.03mm to 0.3mm, Max roll width single 6m
Three lamination co-extrude



Benefits

Effective corrosion protection and packaging combined in one step
Metals are ready for use and assembly directly out of the packaging
Available in many different shapes and sizes
Provides safe* and effective VCI protection.
Recyclable

Protected metals: Iron and steel,
Carbon steel, Aluminum, Copper and Alloy.



- Usage Guide:**
Wear gloves when operating in order to avoid corrosion caused by fingerprint.
Keep the wrapped metal parts dry and clean.
Keep the out packing sealed.
No repeat use.
- Product-form:**
VCI flat bag, VCI gusseted bags, VCI 5 sides bags





Technical Data Sheet

KEYSUN VCI Film

- Applications VCI

Packaging of spare parts (Automotive and industrial).

Packaging of components combining different materials

Seaworthy shipments.

Short term protection during production

Long term storage.



- We can provide you VCI FILM in following types:

VCI Shrink film

VCI stretch film

VCI bubble film

VCI anti-static film

VCI anti-UV film



- Storage & Shelf Life

Storage: Store indoors at moderate temperatures 5-35 C. Keep packing closed and store away from heat sources, in dry and cool place.

Materials should be kept in original packaging or equivalent during storage Shelf Life: up to 18 or 24 months.

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Technical Data Sheet

VCI KRAFT PAPER

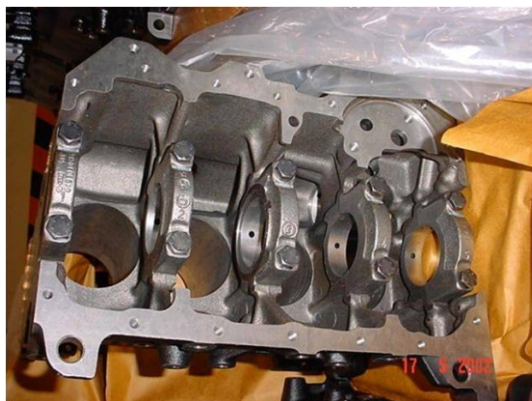
• **PRODUCT DESCRIPTION**

KEYSUN VCI Paper is made with high-quality kraft paper that is saturated on both sides with VCI Liquid.

The product integrates packaging materials with powerful vapor corrosion inhibitors for both ferrous metals&non-ferrous metals.

KEYSUN VCI Paper is acid-free, pH neutral, and non-abrasive. It uses KEYSUN Vapor Corrosion Inhibitor (VCI) technology that is environmental-friendly, cost-effective and easy to use.

More over, the effect is wonderful comparing with traditional anti-rust oil and grease. Save time and money with KEYSUN VCI KRAFT PAPER.



• **Main advantages over other methods**

Protection of a wide range of metals

Dry packaging - no need to apply or remove grease coatings, no use of solvents.

The VCI protects hard to reach surfaces and is self healing.

Easy application for short and long term protection

Long term protection.

• **Applications VCI**

Packaging of spare parts (Automotive and industrial).

Packaging of components combining different materials

Seaworthy shipments.

Short term protection during production

Long term storage.





Technical Data Sheet

VCI KRAFT PAPER

Physical properties of VCI KRAFT PAPER

Properties		Typical value			SD	Test method
Basis Grammage	g/m ²	50	60	65	+/-3 g/m ²	ISO 536
Chloride content in the Water extract	mg/kg	≤60	≤60	≤60		ISO 9197
Sulfate content in the Water extract	mg/kg	≤790	≤790	≤790		ISO 9198
pH-value in the Water extract		7,0-8,5	7,0-8,5	7,0-8,5		ISO 6588-1
MD Tensile Strength	KN/m	5	5,3	5,6	7,5%	ISO 1924-2
CD Tensile Strength	KN/m	2,2	2,5	2,8	7,5%	ISO 1924-2
MD Tear Strength	mN	550	660	715	7,5%	ISO 1974
CD Tear Strength	mN	650	780	850	7,5%	ISO 1974
Wire Side Surface Water Absorption (COBB 60)	g/m ²	40	40	40	5,0%	ISO 535
Porosity (Gurley)	s	20	20	20	10,0%	ISO 5636-5
Moisture Content	% of weight	6,5-8,5	6,5-8,5	6,5-8,5		ISO 287

Available size and thickness:

Standard Roll widths: 787mm, 1092mm, 1200mm

Standard thickness: 45gsm, 60gsm, 75gsm, 80gsm

Special roll size can be customize upon request.

Roll length is customized, normally it is from 183m to 2000m.

Cutting sheet is available.

VCI Kraft Paper is a pH neutral and acid free paper product saturated on both sides with VCI. Custom printing available upon request.

Usage Guide:

Wear gloves when operating in order to avoid corrosion caused by fingerprint.

Keep the wrapped metal parts dry and clean.

Keep the out packing sealed.

No repeat use.

Storage & Shelf Life

Storage: Store indoors at moderate temperatures 5-35°C.

Keep packing closed and store away from heat sources, in dry and cool place.

Materials should be kept in original packaging or equivalent during storage Shelf Life: up to 18 or 24 months.



Recommendations:

Product name	Metal protected	Code of structure
VCI paper used for multimetals (Keysun-M-P)	Ferrous and non-ferrous metal	PO: neutral kraft paper+VCI PA: neutral Paper+PE+VCI
VCI paper used for copper (Keysun-C-P)		
VCI paper used for iron and steel (Keysun-H-P)		
VCI paper for silicon steel (Keysun-G-P)	Special for cold-rolled steel	PC: neutral paper+PE+woven fabric+VCI
VCI paper for galvanizing plate (Keysun-X-P)		

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Technical Data Sheet

VCI POWDER

• Product Description

KEYSUN VCI POWDER is a Vapor phase Corrosion Inhibitor for corrosion protection of ferrous and non-ferrous metals. It provides an extremely efficient dry method to protect metals within an enclosed space.

The VCI vaporizes and then adsorbs on all metal surfaces, reaching every part of the metal surface, including recessed areas and interior cavities. It is off-white color and powder form.



• FEATURES

Provides up to 24 months of continuous protection in contact and vapor phases

Creates monomolecular inhibiting layer

Vapor phase inhibiting action protects inaccessible and recessed surfaces

Environmental friendly, without nitrite or heavy metals.

Easy to apply

• Typical Uses:

1. Various kinds of auto parts, components, machine
2. Equipment during & after hydro-static testing
3. Tubular structures, pipes, and shipbuilding industry
4. Irregular internal surfaces of boiler, engines, heat exchanges, turbines?

When required, powder can be removed by blown air or water rinse

VCI layer does not interfere with operation of mechanical components



• DOSAGE

From 100g to 300g/m³, depends on the requirement of rust term.

Packing and Transportation:

In bulk 50kgs or 25kgs per bag, or packed in small non-woven pouches in any weight up on request.

Types	Applications	Dosage
KEYSUN2100-P	Protect most non-ferrous metals	From 100g to 300g/m ³
KEYSUN113-P	Iron and steels, Boiler, heat exchange, tubes&pipes	From 100g to 300g/m ³
KEYSUN VPI	Used for Shipyards only	From 100g to 300g/m ³
KEYSUN3100-P-2	Used for Copper only	From 100g to 300g/m ³

Storage / Shelf Life

Storage: Store indoors at moderate temperatures 5-35 C. Keep packing closed and store away from heat sources, in dry and cool place.

Materials should be kept in original packaging or equivalent during storage.

Shelf Life: up to 18 or 24 months, when stored indoors at moderate temperatures.





KEYSUN VPI

- KEYSUN VPI Volatile Corrosion Inhibition

Main Technical Properties:

External appearance: white crystal powder

Purity: more than 98%

PH: 7.8(1% water solution)

Volatility in closed space: 7%(24hr)

Solubility in water (g/L): 3.8

Steam pressure: $12.4 \times 10^{-3} \text{Pa}$ (20*)

Melt point: 198~200? C

Dosage: 100g--200g/m²

Vapor phase Inhibitor is a kind of anti-corrosion chemicals, which reaches to the metal surface via their volatile ability that is able to prevent metals from being corroded. It is safe that can replace Dicyclohexylamine Nitrite.

- Benefits**

1. Vapor-phase inhibiting action protects inaccessible and recessed surfaces effectively.
 2. Protected products can be shipped to customers without removing powder.
No regeneration required; effective for up from 2 to 5 years
 3. Little or no surface preparation required.
 4. Prevents further corrosion of the pre-coated and painted surfaces.
- It is very easy to operation and save your time.

- Applications**

1. Shipyards, Wind powder facilities and boilers.
2. Internal surfaces of compressors, turbines, engines, tanks, heat exchanges.
3. Dry lay-up of closed circuit cooling systems.
4. Equipment protection after hydro-static testing.
5. Parts, components and completed assemblies during shipping and storage.

- Metals Protected**

Carbon steels, Stainless steels,

Exposure Limitations

For use in interior cavities and voids that are covered, closed or sealed after application. Product can be stored indoors or out-doors.

Packing and Transportation

In bulk 50kgs or 25kgs per bag, or packed in small non-woven bags in any weight up on request.

- Storage / Shelf Life**

Storage: Store indoors at moderate temperatures 5-35 C. Keep packing closed and store away from heat sources, in dry and cool place.

Materials should be kept in original packaging or equivalent during storage.

Shelf Life: up to 18 or 24 months, when stored indoors at moderate temperatures.

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- Free from and defects in material and workmanship. Liability under this warranty is limited to the net purchase price of any of such products Proven defective or at our option to the repair or replacement of said products upon their return to us transportation prepaid.
We guarantee the Anti-rust term is more 2 years on the basis of right operation.





Technical Data Sheet

VCI Emitter:

- KEYSUN VCI emitters come in various forms from foam to chipboard and can be used as emitters or as cushioning for sensitive products. VCI emitters are easy to install by simply peeling off the adhesive strip backing and pressing the emitter onto a flat surface such the inside lid of a junction box or panel. The protective vapors begin to work immediately, and last for up to 2 years. Protection is clean, dry, and effective on steel, copper, zinc and multi-metal parts.
- Application:**
 - domestic shipment
 - export shipment
 - inventory storage
 - in process operations
 - during shut downs
 - long term storage (mothballing)
- Markets Include:**
Automotive, Construction/Agriculture, Metal Machining, Electronics, Military, Oil & Gas, Aerospace, Steel and steel service centers.



VCI Tablet

- PRODUCT DESCRIPTION**
KEYSUN VCI TABLETS are tablets of compressed VCI powder mixed with crystals that reduce fragility. The active VCI product has an extremely high concentration, equal to 85/90%.
KEYSUN VCI TABLETS provide a high protective power. The inhibiting VCI molecules act by saturating the inside of the package and guarantee long-lasting and constant sublimation.
KEYSUN VCI TABLETS are particularly suitable for integrating and enhancing the anti-corrosive action of the KEYSUN VCI products. Furthermore, thanks to the small sizes, they can be positioned in the most hidden and difficult to protect points.
- They are essentially extremely suitable for protecting the metallic content of bags or small containers. They are the ideal solution for automatic packaging.
- How to use:**
Put VCI tablet in Cartons, Plastic bags or wooden boxes and keep the containers closed.
Keep the distance between VCI tablet and wrapped metal parts and components within 300mm.
The recommendation dosage 300g/CBM. The rust/corrosion inhibiting can last 24 months if it is used correctly.
Recommended for: IRON AND STEEL, COPPER, SILVER, ALUMINUM, ZINC AND ZINC GALVANIZED STEEL
Storage / Shelf Life
Storage: Store indoors at moderate temperatures 5-35 C. Keep packing closed and store away from heat sources, in dry and cool place.
Materials should be kept in original packaging or equivalent during storage.
Shelf Life: up to 18 or 24 months, when stored indoors at moderate temperatures.

