

TOMBO™ BRAND

**Adhesives, Surface Treatment Agents, and Auxiliary
Materials for Hot and Cold Insulation Work**



Adhesives, Surface Treatment Agents, and Auxiliary Materials for Hot and Cold Insulation Work

Adhesives, surface treatment agents, and auxiliary materials are required to maintain the performance of hot and cold insulation materials for many years in hot and cold insulation work.

As a leading manufacturer of hot and cold insulation materials, we have also researched and developed products for auxiliary materials, and have accumulated many years of experience and achievement.



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Product List & Table of Contents

	TOMBO™ No.	Product Name	Working Temperature (°C)	Application	
Adhesives [Cold Insulation]	9845-ACW	ELASTBOND™ ACW	-196 to 60	Two-part polyurethane adhesive Mixing ratio A:B = 1:2 (weight ratio)	P.4
	9845-BU	ELASTBOND™ BU	-196 to 70	Two-part polyurethane adhesive (foam type) Mixing ratio A:B = 1:1 (weight ratio)	
	9845-ST	ELASTBOND™ ST	-196 to 60	Two-part polyurethane adhesive Mixing ratio A:B = 1:2 (weight ratio)	
	9845-UL-1	ELASTBOND™ UL-1	-196 to 60	Two-part polyurethane adhesive Mixing ratio A:B = 1:3 (weight ratio)	
Adhesives [Hot Insulation]	9861-FF	FF Adhesive	Up to 1700	Adhesive between high-temperature thermal insulation wool	P.5 P.6
	9861-FC	FC Adhesive	Up to 1400	High-temperature thermal insulation wool and adhesive for general furnace walls	
	9861-FM	FM Adhesive	Up to 600	High-temperature thermal insulation wool and adhesive for steel plates	
	9861-TM	TOMBO Refractory Mortar S-40	Up to 1400	Adhesive between refractory bricks	
	9800-BF	Insulation Adhesive	Up to 1000	Adhesives such as calcium silicate hot insulation materials and inorganic refractory covering materials	
	9824	MARINE BOND™ M	Up to 550	High temperature adhesive used for glass cloth	
	9825	MARINE BOND™ K-1	Up to 250		
Silicone Sealants	9884-SG	Silicone Sealant #30 [Gray]	-40 to 120	Oxime-type silicone elastic sealant	P.7
	9884-SW	Silicone Sealant #30 [White]			
	9884-SC	Silicone Sealant #30 [Clear]			
	9884-SS	Silicone Sealant #30 [Silver]			
	9884-SH	Silicone Sealant #30 for High Temperatures	-55 to 250	High temperature type of Silicone Sealant #30 Can be used up to 250°C	
Coating Materials	9840-A	ELASTNART™ A	-40 to 85	Two-part polyurethane coating material It offers excellent flexibility, weather resistance, and seawater resistance	P.7
	9871	Spray Coat	Up to 1500	Spraying on the surface of FINEFLEX BIO lining improves resistance to air flow, scale, dust, and alkali	
Heat Transfer Cement	9817	THERMOCON™ H	40 to 500	Heat transfer cement that can efficiently transfer heat from the traced line to the tank or pipe THERMOCON H is an air-hardened product for high temperature applications THERMOCON R is a thermosetting product	P.8
	9818	THERMOCON™ R	-70 to 200		
Auxiliary Materials	9832-B	Lagging Cloth B		Glass cloth impregnated with asphalt Used as a auxiliary material for black mastics	P.9
	9832-W	Lagging Cloth W		Glass cloth impregnated with synthetic resin Used as a auxiliary material for non-black mastics or coatings	
Installation Example					P.9
Precautions for Use					P.10

Adhesives for Hot and Cold Insulation Work

Adhesives are used to fix various hot and cold insulation materials to an installation surface, or to bond hot and cold insulation materials together.

We have a broad lineup of adhesives for various applications.

Type

We offer adhesives for hot and cold insulation work according to your application.

As we also have various other products that are not included in our table of selected products and performance table, please contact us for any further information.

Features

- Application is easy and efficient because the adhesive is in the form of a paste or solution.
- An adhesive effect can be achieved in a short period of time.
- We have a huge range of products available.
- We support a wide range of temperature conditions.

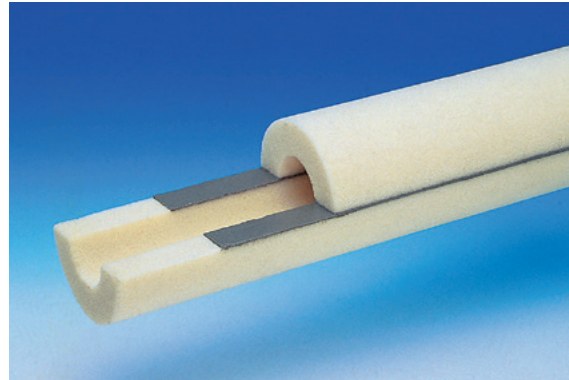
Table of Selected Products

Mating Material		Thermal Insulation Material	Calcium silicate	MG Product (rock wool)	FOAMNART™ (rigid polyurethane foam)	Glass Wool	Cellular Glass	Polystyrene
		Metal	Stainless steel	9800-BF	9800-BF	9845-ST 9845-BU	9845-ST	9845-ST 9845-BU
Steel	9800-BF		9800-BF 9861-FM	9845-ST 9845-BU	9845-ST	9845-ST 9845-BU	9845-ST	
Aluminum material	—		—	9845-ST 9845-BU	—	9845-ST 9845-BU	—	
Non-metallic material	Plywood	—	—	9845	—	—	9845	
	Calcium silicate	9800-BF	9800-BF	—	9824 9825	—	—	
	Rock wool	9800-BF	9800-BF	—	9824 9825	—	—	
	Polyurethane	—	—	9845	—	9845	9845	
	Glass Wool	9824 9825	9824 9825	—	9824 9825	—	—	
	Cellular Glass	—	—	9845	—	9845	9845	
	Polystyrene	—	—	9845	—	9845	—	

*The "—" mark in the table indicates that we do not have an adhesive available.

*If there are two or more types of adhesives, please check the performance table on the next page before making your selection.

Adhesives for Cold Insulation Materials



Example of use with FOAMNART Cover
(The color of ELASTBOND BU has been altered for photographic purposes.)

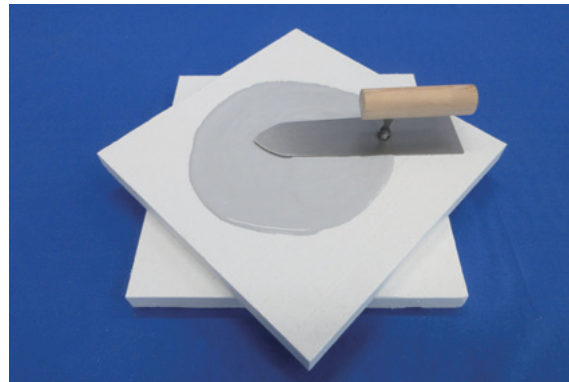
Performance Table

TOMBO™ No.	9845-ST	9845-BU	9845-UL-1	9845-ACW
Product name	ELASTBOND™ ST	ELASTBOND™ BU	ELASTBOND™ UL-1	ELASTBOND™ ACW
Item				
Weight per liter (kg/l)	Mixture 1.25	Mixture 1.06	Mixture 1.34	Mixture 1.25
Working temperature range (°C)	-196 to 60	-196 to 70	-196 to 60	-196 to 60
Flammability after drying	Combustibility (Fire strictly prohibited)	Combustibility (Fire strictly prohibited)	Combustibility (Fire strictly prohibited)	Combustibility (Fire strictly prohibited)
Main component contained in the product	polyurethane resin	polyurethane resin	polyurethane resin	polyurethane resin
Pot life	20 to 30 minutes	20 to 30 minutes	20 to 30 minutes	2 to 3 hours
Cure time	16 hours	15 hours	16 hours	16 hours
Standard amount used ^{Note 1} (kg/m ²)	2.5 (±0.5)	1.0 (±0.2)	0.4 to 0.7	3 to 4
Color (after mixing)	Red	White	Cream	Gray
Features	<ul style="list-style-type: none"> • Two-part polyurethane adhesive • Can be used for cryogenic sealing and adhesives • TOMBO No.9845-BU is a foamed type 			
Application method	Using a trowel or spatula		Using a spatula	Using a trowel or spatula
Quantity	Set = Part A + Part B (Mixing ratio A:B = 1:2)	Set = Part A + Part B (Mixing ratio A:B = 1:1)	Set = Part A + Part B (Mixing ratio A:B = 1:3)	Set = Part A + Part B (Mixing ratio A:B = 1:2)
	Part A: 6 kg/can Part B: 12 kg/can	Part A: 5 kg/can Part B: 5 kg/can	Part A: 2.5 kg/can Part B: 7.5 kg/can	Part A: 6 kg/can Part B: 12 kg/can

Note 1: The standard amount used varies depending on the state of the base material; the values in the table should be used only as a guide.

*The values above are our actual measurement values, and therefore are not standard values.

Adhesives for Hot Insulation Materials



(The color of FF Adhesive has been altered for photographic purposes)

Performance Table

TOMBO™ No.	9861-FF	9861-FC	9861-FM
Item	Product name FF Adhesive	FC Adhesive	FM Adhesive
Weight per liter (kg/l)	1.7	1.8	Powder A: 1.8 Solution B: 1.4 Mixture: 3.1
Maximum working temperature (°C) ^{Note 1}	1700	1400	600
Flammability after drying	Non-flammable	Non-flammable	Non-flammable
Binder type ^{Note 2}	Silica	Silica	Sodium silicate
Drying time	12 to 24 hours	12 to 24 hours	12 to 24 hours
Standard amount used (kg/m ²) ^{Note 3}	1.0 to 1.5	7 to 10	3 to 5
Color	White	Gray	Black
Chemical components	Al ₂ O ₃ : 86% SiO ₂ : 13%	Al ₂ O ₃ : 41% SiO ₂ : 55%	Fe: 80% SiO ₂ : 13%
Features	<ul style="list-style-type: none"> An alumina adhesive that can bond together high-temperature thermal insulation wool products 	<ul style="list-style-type: none"> Adheres high-temperature thermal insulating wool products and brick foundations 	<ul style="list-style-type: none"> Adheres high-temperature thermal insulation wool products and MG Products (rock wool) with steel plates
Application method	Trowel and brush	Trowel	Trowel
Quantity	330 cc/cartridge 5 kg/can 25 kg/can	3 kg/can 25 kg/can	Set = Part A + Part B (Mixing ratio, Powder A : Solution B = 3:1) 3 kg set/can 25 kg set/can

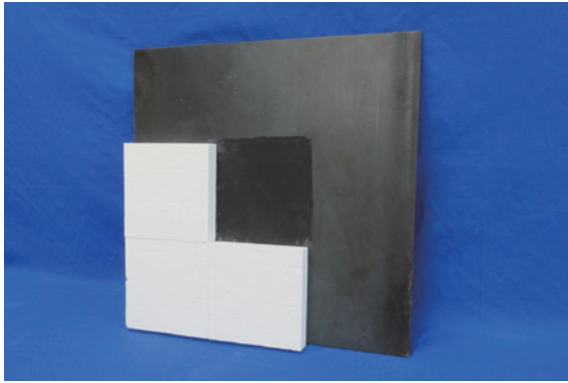
Note 1: The maximum heat resistance temperature of the adhesive.

When bonding FINEFLEX BIO using FC or FF Adhesives, please be aware that depending on the usage environment, the bonding effect may decrease or a melting reaction may occur at temperatures above 1100°C.

Note 2: Do not apply sodium silicate-based adhesives to aluminum, zinc, or other metal surfaces that are easily affected by alkaline properties.

Note 3: The standard amount used varies depending on the state of the base material; the values above should be used only as a guide.

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Installation example of steel plate and FINEFLEX BIO Board (FM Adhesive)

	9861-TM	9800-BF	9824	9825
	TOMBO Refractory Mortar S-40	Insulation Adhesive	MARINE BOND™ M	MARINE BOND™ K-1
	2.0	1.75	1.35	1.39
	1400	1000	550	250
	Non-flammable	Non-flammable	Non-flammable	Non-flammable
	Sodium silicate	Sodium silicate	Silica	Silica
	12 to 24 hours	12 to 24 hours	12 to 24 hours	12 to 24 hours
	—	1.8 (±0.5)	1.2	1.0
	Yellowish brown	Gray	White	White
	SiO ₂ : 84% Al ₂ O ₃ : 10%	SiO ₂ : 57% MgO: 22% Al ₂ O ₃ : 11%	—	—
	<ul style="list-style-type: none"> • Adheres refractory bricks • Air hardening (air set type) • Corrosion resistant against high temperature acidic gases 	<ul style="list-style-type: none"> • Adheres calcium silicate hot insulation materials, inorganic fire-proofing covering materials, etc. • Can fill the gaps between refractory materials 	<ul style="list-style-type: none"> • Adheres glass wool products and MG Products (rock wool) • High heat-resistant temperature 	<ul style="list-style-type: none"> • Adheres glass wool products and MG Products (rock wool) • Greater adhesive strength than MARINE BOND M
	Trowel	Trowel, spatula	Trowel	Trowel
	20 kg/can	5 kg/can 25 kg/can	20 kg/can	20 kg/can

Silicone Sealants

Silicone sealant is a coating material (weathering) used to prevent moisture and rainwater from entering seams of sheet metal, etc. Our products have excellent flexibility, water resistance, and chemical resistance, and deliver excellent sealing performance.



Features

- Application is easy and efficient because the adhesive is in a paste form.
- The adhesive offers excellent weather resistance.

Performance Table

TOMBO™ No.	9884	9884-SH
Item / Product name	Silicone Sealant #30	Silicone Sealant #30 for High Temperatures
Weight per liter (kg/l)	1.05	1.04
Working temperature range (°C)	-40 to 120	-55 to 250
Safety against fires	Flammable	
Curing time at 20°C	Dry to the touch	15 minutes
	Fully cured	7 days
Standard amount used ^{Note 1} (kg/m ²)	13 meters/roll (Joint width × depth = installation length at 5 × 5 mm)	
Color	9884-SC Clear / 9884-SG Gray / 9884-SS Silver / 9884-SW White	Red
Features	<ul style="list-style-type: none"> ● Oxime-type elastic sealant ● Chemical resistance ● Weather resistance 	
Application method	Caulking gun	
Quantity	333 ml/cartridge	

Note 1: The standard amount used varies depending on the state of the base material; the values above should be used only as a guide.

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Coating Materials

Type & Application

TOMBO™ No. 9840-A
ELASTNART™ A

It is used for corrosion protection of steel surface coating. It offers excellent flexibility, weather resistance, and seawater resistance.



TOMBO™ No. 9871
Spray Coat

Spraying on the surface of FINEFLEX BIO lining improves resistance to air flow, scale, dust, and alkali.



Performance Table

TOMBO™ No.	9840-A	9871
Item / Product name	ELASTNART A	Spray Coat
Weight per liter (kg/l)	Mixture: 1.50	2.8
Working temperature range (°C)	-40 to 85	Up to 1500
Safety against fires	Before drying	Flammable
	After drying	Combustibility (Fire strictly prohibited)
Product base and solvent used	polyurethane resin	Water
Guide for drying, curing, etc. at 25°C	Time at which it can be used after mixing: within 50 minutes Curing time: 1 day	12 hours or more at 20 to 25°C (installation surface) 2 hours or more at 60 to 80°C (installation surface)
Standard amount used ^{Note 1} (kg/m ²)	1.2 to 3.2	3 to 5 (thickness 1 to 2 mm)
Color	Gray	Gray
Application method	Apply with trowel and brush	Architectural spray gun
Quantity	Set = Part A + Part B (Mixing ratio A:B = 1:2) Part A: 6 kg/can Part B: 12 kg/can	5 kg/can 20 kg/can

Note 1: The standard amount used varies depending on the state of the base material; the values above should be used only as a guide.

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Heat Transfer Cement

THERMOCON™ is a heat transfer cement that can efficiently transfer heat from the pipe tracing to the tank or pipe.

Type & Application

TOMBO™ No. 9817

THERMOCON™ H

It is a water-based product for high temperature applications. Install by applying with a trowel.

*Be aware that it is water soluble even after it has dried.

*Please contact us beforehand when installing this product on stainless steel piping or copper piping.

TOMBO™ No. 9818

THERMOCON™ R

A thermosetting product with a solid component content of 100%. It has strong adhesive strength with pipe tracing and main units, and is installed by applying with a trowel or by way of a cartridge.

*If storing THERMOCON R for a long time, store it in a cool and dark place.

*When installing THERMOCON R, warm up both the can and cartridge version of the product to about 60°C (to facilitate installation).

*Once THERMOCON R has been warmed up, it gradually reacts and hardens, and therefore it cannot be stored. Make sure to warm up only the amount you actually want to use.



Installation example of THERMOCON H

Installation Precautions

If the installation is incomplete, it cannot be adhered adequately and there will be a risk of it peeling. Make sure to observe the following precautions.

- ① **Remove traces, rust, etc. from the installation surface of the tracer and header, and perform surface preparation until the surface of the pipe appears.**
- ② **When installing, press the product down well with a trowel to adhere it to the pipe.**
*Take extra special care when installing the product on the underside of pipes.
*We also have a plate for preventing the product falling off.
- ③ **The tracer and header should be tightly tied with a tying band.**
- ④ **When installing THERMOCON R at low temperatures, heat the pipe tracing. If it cannot be heated, use an electric heating trowel.**

Performance Table

TOMBO™ No.	9817	9818
Product name	THERMOCON H (water-based)	THERMOCON R (resin type)
Item		
Weight per liter (kg/l)	1.77	1.50
Working temperature range (°C)	40 to 500	-70 to 200
Thermal conductivity (W/(m•K))	12.8 (at 200°C)	8.1 (at 200°C)
Density (kg/m ³)	1600 (after curing)	1450 (after curing)
Guide for drying and curing	Heated drying for 24 hours after natural drying of 5 hours (at 60 to 80°C)	3 to 12 hours for heated curing (at 90 to 150°C)
Color	Black	Black
Quantity	20 kg/can	25 kg/can 330 ml/cartridge

*The values above are our actual measurement values, and therefore are not standard values.

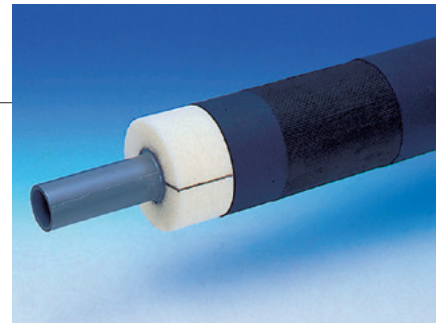
Standard amount for installation

Unit: (kg)

Pipe tracing size	THERMOCON H	THERMOCON R
1/2 B gas pipe	1.20	0.30
3/4 B gas pipe	1.73	0.48
1 B gas pipe	2.50	0.75
1•1/2 B gas pipe	4.70	1.53
3/8 B copper pipe	0.54	0.10
1/2 B copper pipe	0.75	0.16
3/4 B copper pipe	1.25	0.32

*This is the amount used based on the calculated value per 1 m of the corresponding pipe tracing size. Any loss during installation is not included.
If the pipe tracing is not in close contact with the header, the amount used will increase.

Auxiliary Materials



Installation example with FOAMNART Cover (Lagging Cloth B)

Type & Application

TOMBO™ No. 9832-B

Lagging Cloth B

It is a auxiliary material for black mastic, used between the mastic / undercoat and topcoat.

TOMBO™ No. 9832-W

Lagging Cloth W

As a auxiliary for non-black mastics and coating materials, it is used in the same way as Lagging Cloth B.

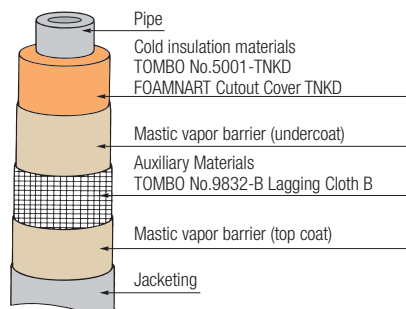
Properties

TOMBO™ No.	9832-B	9832-W
Item	Lagging Cloth B	Lagging Cloth W
Composition	Glass cloth (asphalt treated)	Glass cloth (synthetic resin treated)
Weave method	Plain weave	Leno weave
Standard dimensions	0.2 mm (t) × 1040 mm (W) × 50 m (L)	0.2 mm (t) × 1040 mm (W) × 100 m (L)

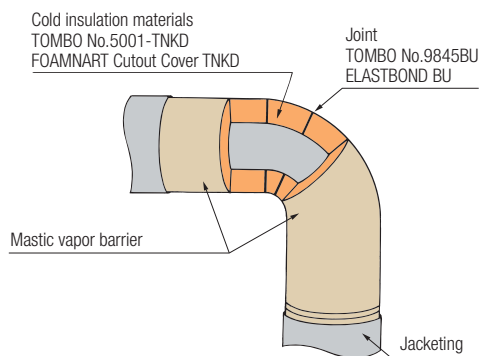
Installation Example

1 Cold insulation of pipes

(1) Straight pipe

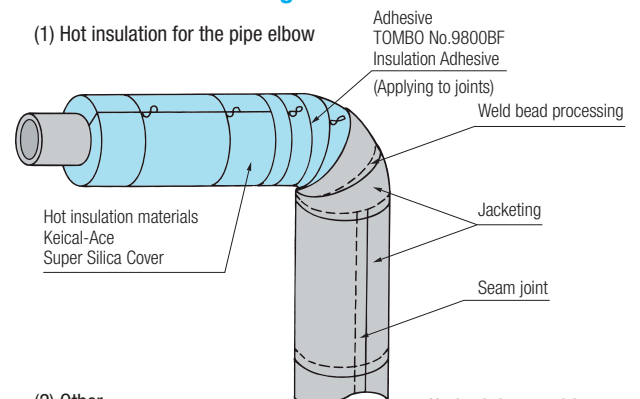


(2) Curved pipe parts

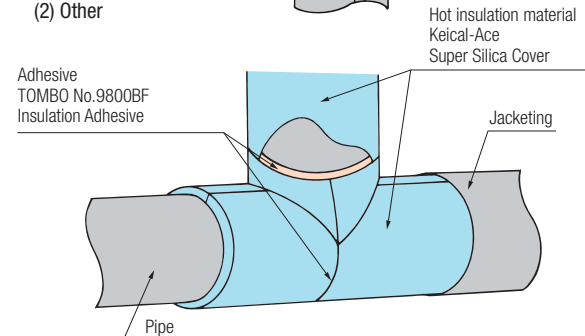


3 Hot insulation of fittings

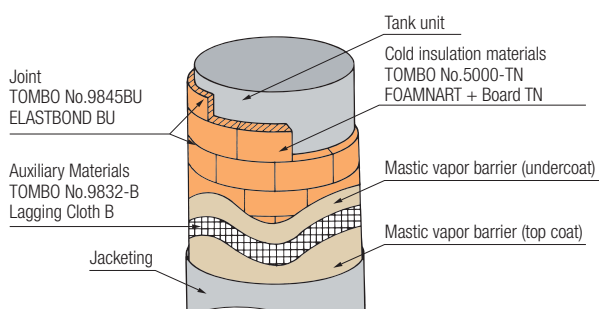
(1) Hot insulation for the pipe elbow



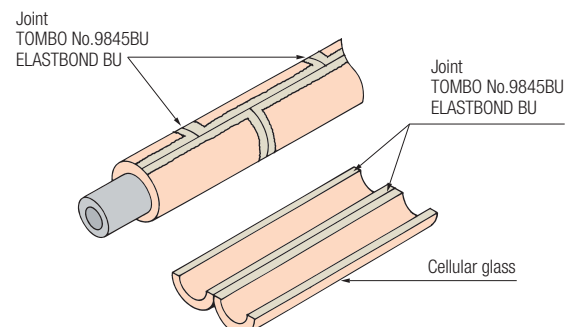
(2) Other



2 Installation of tank towers (cold insulation)



4 Waterproof and moisture proof treatment of cellular glass seams





Numerical Values, Handling Precautions, and Related Laws and Regulations Used in Catalog

■ Flammability

◆ Flammability

- Safety before and after drying is indicated for each product.

◆ Fire is strictly prohibited.

- Flammable materials must be kept strictly away from fire and must not be installed where there is heat, sparks, or flames.

(Fire is strictly prohibited near flammable materials even after they have dried.)

■ Notes on Handling the Products

◆ Check the safety data sheet (SDS) regarding cautions on occupational health.

◆ Ensure adequate ventilation (wear a gas mask or breathing protection gear).

- If the solvent remains undried during and after installation, provide ventilation.

◆ Wear protective gloves.

- If any product adheres to the skin, remove it immediately and rinse with water.

◆ Stir the product well before use.

◆ Do not dilute the product.

◆ Perform sufficient surface preparation and try one's best to install the product on a dry and clean surface.

◆ Prepare clean tools and apply the product so that the coating thickness is uniform.

◆ Do not freeze products whose solvent or cleaning agent is water.

◆ Regardless of the working temperature range of the product, install it in a temperature environment of 4 to 38°C.

◆ Clean used equipment with a petroleum solvent or similar.

◆ In principle, the storage period for products is 6 months when stored in a cool, dark place in an unopened state.

◆ When not in use, completely close the lid of the container to prevent volatility and contamination.

◆ Disposal must be done in accordance with all federal, state and local regulations.

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SUZHOU NICHIAS SEAL MATERIAL CO., LTD.

(苏州霓佳斯密封材料有限公司)

SHANGHAI XINGSHENG GASKET CO., LTD.

(上海兴盛密封垫有限公司)

SUZHOU SHUANGYOU AUTOPARTS CO., LTD.

(苏州双友汽车零部件有限公司)

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