SEAL PEEL COMPOUND

RECYCLING

Plastic Coating Compound, Easily Strippable:
Used for preventing from corrosion for a long time and protection from damage, as a new method for preservation and packing

A gear can be easily peeled even after stock of 10 years.

Gear and peeled-out film (AR-1)

For protection of a large size gear

Anti-corrosion and Shockproof Packing Material

FEATURES

This is plastic compound made from natural vegetable fibers like pulp and cotton (cellulose) as major material as well as vegetable oil, mineral oil and other chemicals. This cellulose resin has the property to form plastic film by intermolecular bonding due to its lipophilicity under certain specific temperature only.

There are two types of compounds, transparent and translucent. This compound is melted in an electric heating bath, and an object to be packed is dipped into the melted compound. When it is taken out of the compound, coated film layer is formed along with the original shape of the object, and thus you can have complete plastic coated packing.

This plastic coated film is solid under the ambient temperature, and has superb crashproof, and cold and heat resistant characteristics. It has also resistance to rust, corrosion, mold, oxidation, moisture, water penetration, sea breeze and salt water, and high electrical insulation. Its soft and elastic plastic coating works as cushion against impact, and as it is transparent or translucent, you can know immediately what is inside, and to take out the packed object, you can peel its plastic coating very easily just like you peel a banana.

Thus, the SEAL PEEL processed products will save your time for material packing as well as space and weight for transportation, with good protection from damage. Peeled-out film can be recycled, if it is not tainted, and used in mixture together with new compound.

APPLICATION

For the purpose of anti-rust and damage-preventing packing, the SEAL PEEL process can be applied to such parts as of:

Vehicles, Automobiles, Aircrafts, Spinning and Weaving Machines and Other Machines, as well as Tools, Jigs, Gears, Cutters, Hobs, Nozzles, Drills, Dies, Reamer Taps, Gauges, Calipers, Micrometers, Bits, Diamond Tools, including various sorts of Mechanical Parts and Polished Metal Plates, etc.

This SEAL PEEL process can be also applied to the protection of various electric parts by making use of its insulation performance (approx. 2,300V AC or DC against the coating thickness of 0.8mm), and of various instruments that may by affected by sea breeze and water.

The SEAL PEEL processed products can be stocked for a long period of time without quality deterioration, and as those have high resistance to very hard climate alteration, it is recommended to apply this epoch-making packing method to your export sale of various valuable parts or products.

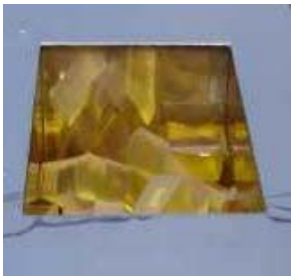
- The packing method using this compound meets the U.S. Packing Standard MIL-P-149A.

HOW TO USE

First, you have to procure locally a suitable type of Electric Heating Bath with the temperature control.
The working temperature is 170ºC to 190ºC (except AR-1), and it is very important to keep this temperature range.

1. Clean the parts to be processed using organic solvent, or finger-print removing solvent, etc. as oil, dust and finger-print, etc. attached to the parts, if any, may cause rust in the future.
2. Cut blocks of compounds into small pieces and put them into the heating bath.
3. This compound has very low thermal conductivity, so melting temperature must be gradually increased, such as 30 min. for 100ºC, 30 min. for 130ºC and then to 150ºC, etc. Rapid temperature increase may accelerate the compound's aging, and when the temperature of 200ºC or more is applied, the compound will start to be decomposed. Usually set the temperature of your heating bath to 150ºC for AR-1, and 180ºC for SP-25, ED-7 and SD-3A.
4. After putting a top cover of the heating bath, wait for 2-3 hours, and the compound melts to liquid with small bubbles. Open the bath cover, and stir the liquid compound uniformly using an appropriate metallic bar.
5. Dip the parts for a few seconds, and slowly take them out. The parts are coated and packed with thin film layer of 0.8mm to 2mm, and it will be hardened in about 30 to 60 seconds. For clean finishing, it is suggested to use a string or hook to hang the parts.
6. When the liquid compound remains in the heating bath for 60 hours at 180ºC (about one week as working hours), it will start heat aging. The liquid's color grows rich, intermolecular bond weakens, viscosity lowers and decomposition starts. To avoid such a problem, make shorter your cycle of this SEAL PEEL process by adding more new blocks of compounds appropriately, or use all the compound put into the bath at once. The peeled-out old film can be also used and recycled, if it is not tainted, with the new compounds at the rate of 10% or so in mixture. The more you use old films, the less the new film's strength will be.


Electric heating bath


Compound cut into pieces


Dipping into the bath


Slowly taking out of the bath

CAUTIONS

1) The surface of the parts to be processed must be cleaned first.
2) Dipping time depends on the size of the parts.
3) If white smoke is emitted from the heating bath, it will indicate that the temperature of the melted compound exceeds 200ºC. Immediately turn off the heating bath or adjust the temperature to the specified degree.
4) Do not dip any heated parts.
5) Do not try to melt the compound rapidly at a high temperature.
6) Dry well any porous and damp parts before dipping.
7) When bubbles are coming up from the dipped parts, try to change the dipping angle.
8) When bubbles are seen in the melted compound, keep heating for a while under 200ºC until bubbles disappear.

When the temperature of 200ºC or more is applied, the compound's decomposition speed is accelerated. Once the compound is decomposed at the temperature higher than 200ºC, it will lose an ability to form a film and cannot be used any more. So, do not use and dispose of such decomposed compound in this case. Even if new blocks of the SEAL PEEL compound are replenished, the adverse effects of heat-aged oil remain, and you will not be able to use the whole mixed compound. Meanwhile, the compound appears to have been also decomposed even at the lower temperature of 160ºC to 170ºC (except AR-1) due to the insufficient heating. In such a case, when you increase the temperature to 180ºC to 190ºC, and stir well the compound, its original behavior will come back, provided that the compound is new. The heating control is really important for this SEAL PEEL compound.

IMPORTANT

Indication when the melted compound's temperature has increased to 200ºC or more:

- Evaporation mist coming out of the heating bath includes abnormal white smoke.
- Smell coming out of the heating bath is becoming stronger than usually.
- No film is formed or filmed layer is very thin and fragile.
- There is a possibility that the SEAL PEEL compound may catch fire when using it at 210ºC or more.

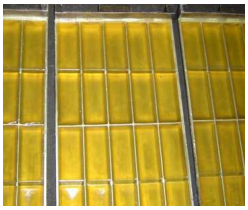
TYPES OF SEAL PEEL COMPOUNDS WITH FEATURES

Model	AR-1	SP-25	ED-7	SD-3A
Appearance	Blue, translucent	Faint dark brown	Cinnamon color	Dark brown, translucent
Working temperature	150ºC	180 to 190ºC	180 to 190ºC	170 to 180ºC
Softening point	65ºC	115ºC	110ºC	110ºC
Flash point	215ºC	210ºC	210ºC	210ºC
Film hardness	Rubber elasticity	Hardish	Hardish	Softish
Dipping time	5 to 10 sec.	5 to 10 sec.	5 to 10 sec.	5 to 10 sec.
Tensile strength	2.5kg/cm^2	35kg/cm^2	28kg/cm^2	18kg/cm^2
Stretch strength	1100%	75 to 85%	90 to 100%	90 to 100%
Cycling test	There should be no rust on the base metallic parts.			
Stripping	As one piece of film, it can be continuously stripped.			
Anti-flexure	There should be no crack even if a film is folded up to 180º.			
Moisture resistance	No rust is generated under the condition that the base metallic parts are coated with film.			
Chemical resistance	1. Not affected: Water, vapor, salt solution, alcohol, weak acid, mineral oil, grease, etc. 2. Slightly affected: Strong acid, Strong alkali 3. Affected: Most of organic solvent			
Features	Easily strippable soft film, for the parts with deep grooves	For long time anti-corrosion & export packing	Color change by heat, Slow aging	Easily strippable, translucent
Major use	Drill tap, end mill	Parts for industrial machines & precision equipment	Measuring tools, parts for ships	General cutware, die assembly parts
Resin name	SBR rubber	Cellulose	Cellulose	Cellulose


AR-1


SP-25


ED-7


SD-3A

Manufactured by:
Daikyo Chemical Co., Ltd.

Supplied in the shape of solid ingots by:
- 25kg carton (500g x 50 pieces)

Effects of Introducing SEAL PEEL Packing

- Saving your packing costs
- Immediate use after easily peeling off the film packing
- Perfect anti-corrosion by oil exudation from the film
- Cutting down of your conventional packing weight
- Saving the costs of conventional anti-corrosive packing materials
- Reducing the cargo dimensions compared with conventional packing method
- Possible recycling of used/peeled-off films
- Easy inspection by film-packed products/parts
- Easy recognition of the internal products'/parts' dimensions and numbers, etc. from the outside
- Avoiding damage and wear-out during the transportation
- Suitable for long period stock

Applicable Ordinances

- PRTR (Pollutant Release and Transfer Register) is not applied to the SEAL PEEL compounds.
- RoHS (Restriction of Hazardous Substances in E.U.) is not applied to the SEAL PEEL compounds.
- Fire Defense Law: Specified inflammable material, 3,000kg or less (in Japan)
- The SEAL PEEL compounds are not dangerous items for export, and MSDS is available on request.

XEBEX

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