OXIFEND5

ANTIGRIP 1:20 CONCENTRATED PASSIVATION FOR SILVER AND COPPER ALLOYS

PRODUCT DESCRIPTION

OXIFEND5 is a concentrated anti-tarnish chemical passivation. It has been developed for metallic substrates which naturally have poor corrosion resistance, like silver, brass, bronze, low karat gold, and some electroplated layers. If applied to those metals, resistance to oxidation (tarnish) is dramatically elevated by providing an invisible layer which seals the substrate from external elements. Laboratory tests have proven that chemical passivation protects from corrosion originating from hydrogen sulfide, UV radiation, synthetic sweat, and humidity.
The ready-to-use **OXIFEND** solution has got also important lubricating properties: if applied on the surfaces to be treated, it gives better fluency on the same, lowering friction coefficient.

OXIFEND5 is sold in a 250 ml bottle that makes able the preparation of 5 liters ready-to-use passivating solution when mixed with deionized water.

DEPOSIT DATA	
Thickness from - to (µm)	0.001 – 0.01
Aspect	Totally invisible

PRODUCT FORM	
Format	Concentrated liquid
Product pH	Acidic
Color of the product	Whitish
Storage time	18 months

PRODUCT USAGE

In order to use properly the OXIFEND passivating solution, the following technical parameters must be followed:

PARAMETER	OPTIMAL	RANGE
Temperature (°C)	55	50 - 60
Treatment time (min)	10	5 – 20
pH	6.0	5.0 – 7.0
Agitation	Moderate	
IN CASE OF ELECTROLYTIC APPLICATION		
T-SALT (g/L)	2.5	
pH		3.0 – 5.0
Anodes	MMO	

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READY TO USE SOLUTION PREPARATION

The OXIFEND5 product, supplied in 250 ml bottle, allows the preparation of 5 liters of ready-to-use (20 times concentrated).
To prepare the ready-to-use solution proceed as follows:
1) Switch on the suction system.
2) Pour the concentrated product and demineralized water into the working tank until the final volume is reached. It may be necessary, if necessary, to slightly heat the product tank in a bain-marie, in order to make the concentrate more fluid and therefore easier to pour into the working tank.
3) Then heat the ready-to-use solution thus obtained to the working temperature. In this temperature range the solution should become from white turbid to clear transparent. Do not dilute **OXIFEND5** when cold or at room temperature.

FOR ELECTROLYTIC WAY USAGE: in case of electrolytic usage through direct current application, add 2.5 g of **T-SALT** conducting salts per each liter of ready to use solution with the usage of MMO anodes connected to the positive electrode of a DC power- rectifier and wait for their complete dissolution before starting to work.

APPLICATION WAYS

OXIFEND5 is easy to use, by simple immersion of the items to be treated at the working temperature.

Moreover, by the addition of suitable conducting salts **T-SALT, it can also work by electrolytic way**, thus reducing the application time of about half with respect the one required by chemical way and increasing its throwing power.

Thanks to all those advantages, *the electrolytic way is suggested when it is required to treat items which show portions of surface normally difficult to reach* as undercut, chains or partially hidden parts *because of the specific shape of the same items to be treated.*

OXIFEND PASSIVATING SOLUTION MAINTENANCE

It is preferable to use the passivating solution until natural exhaustion for small-medium size volumes. Then, replace the passivating solution with a new one.

In any case, it is advisable to replace the entire solution every 4-6 months due to the natural aging of the active molecule and the inevitable contaminations due to drag-out phenomena.

A decrease in volume by evaporation must be replenished by adding fresh demineralized water.

It is also possible to estimate the **OXIFEND5** content through a refractometric index measurement (Brixel degree). The best way to proceed is to determine the refractive index (R.I.) value when the solution is just installed and keep it as benchmark. Then, check its variation through periodic measurement: the R.I. value for **OXIFEND** ready to use solution is in the range 4 – 6 Brixel degree.

When the R.I. value decreases of 1 point, it is advisable to add 12,5 ml/l of OXIFEND5 to restore the optimum content of active product.

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USER GUIDE

APPLICATION CYCLE

It is advisable to pre-treat items to be passivated by using an ultrasonic solution or washing them with warm water, especially in case of empty articles because they can generate drag-out phenomena. Here it's reported a typical cycle which involves the use of OXIFEND5:

- Ultrasonic cleaning (suggested product **NEATECH503US**)
- Recovery/rinsing
- Washing
- Electrolytic degreasing (suggested product **NEATECH501UN**)
- Recovery/rinsing
- Washing
- Neutralization (suggested product **SATT**)
- Recovery/rinsing
- Washing
- Treatment with **OXIFEND** solution
- Recovery/rinsing
- Washing in hot water (60 – 70 °C)
- Drying in the oven using hot air (50 – 60°C)

Avoid any kind of mechanical drying based on friction effects.

PURITY OF PROCESS WATER

In order to prevent any contamination in **OXIFEND** solution both during preparation and during any subsequent maintenance operation, demineralized water with a conductivity of less than 3 µs/cm should be used (and free of any trace of organic compounds, chlorine, silicon and boron).

MATERIALS FOR THE WORKING TANK

For the right use of this product, you are advised to use PVC, polypropylene or PYREX glass tanks provided with thermostat-controlled heaters and an efficient exhaust system. Do not use stainless steel or iron tanks.

It is advisable to use an insulated tank since the uniformity of temperature allows to achieve the optimal performance of the product

HANDLING AND FILTRATION

Use a magnetic driven filter pump with a 50 microns paper or wire wound filter. This helps both to make the temperature homogeneous throughout the solution, and the homogeneity of the solution itself and of the part of the liquid in contact with the pieces to be passivated.

HEATING SYSTEM

The admitted materials for heaters are Pyrex, quartz or PTFE.

REFRACTIVE INDEX DETERMINATION

To have a good estimation of the Refractometric Index, (R.I.), it is advisable to use a refractometer with a

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scale from 0 to 10 Brixel degree. The R.I. measurement performed at room temperature is difficult to determine and it gives usually higher values compared to ones at working temperature

REMOVAL OF PASSIVATION LAYER

If it is necessary to remove the passivation layer, for example to carry out the deposition of another plating layer over the so passivated surface, it will be necessary to alternate ultrasonic cleaning and electrolytic degreasing several times. Better results are obtained if a few grams of cyanide is present in the degreasing.
To be sure the passivation layer has been completely removed, check the correct plating deposition on a small sample.

It is important to know that common gold and/or palladium strippers can remove passivating layers.

FOR ELECTROLTYICAL WAY TO USE ONLY

ANODES

In case of application by electrolytic way, usage of MMO anodes is advisable.

DC POWER RECTIFIER

Use a current DC rectifier having an alternate current residue – ripple – less than 5% and having an output amperage enough to obtain a proper electroplating process. This rectifier should be equipped with:

- Amperemeter,
- Voltmeter,

SAFETY INFORMATION

The classification and designation of the process and its products are indicated in the safety data sheets supplied together with the products in accordance with the European legislation currently in force. The safety and environmental protection instructions must be respected to avoid danger to people and the surrounding environment. Before each use of the products, consult the safety data sheets of each bathroom component in detail. Please read them carefully to protect people and the surrounding environment from possible dangers.

DISCLAIMER

All recommendations and suggestions in this bulletin concerning the use of our products are based upon tests and data believed to be reliable. Since the actual use by others is beyond our control, no guarantee expressed or implied, is made by Legor Group, its subsidiaries of distributors, as to the effects of such use or results to be obtained, nor is any information to be construed as a recommendation to infringe any patent.

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