

Advisory Number: AS-45499-001

Revision: C1

## Subject

Moisturizing nylon connector parts with high-stress flexing members.

## Background

Few connector housing materials offer the performance and cost advantages of nylon. Its high impact strength, superior mold processing capability, and cost effectiveness make nylon the material of choice for many of today's interconnects.

Nylon is a hygroscopic material, which means it readily absorbs and releases moisture. If moisture content is allowed to decrease below recommended levels, nylon parts become brittle. Flexible members may become susceptible to breakage. This condition is of greater concern in locations with low humidity and during dry seasons, such as winter.

## What connector types are susceptible and should be moisturized?

Nylon connectors with any high-stress flexing members, such as the mounting ears shown below, as one example, are candidates for failure due to improper moisturization.



Mounting ears are designed for high panel retention strength within a minimal panel space. Inserting the part into a panel results in stress in the flexing members. This condition is further heightened in dry climates and during dry seasons. To reduce the risk of failure on insertion, housings with flexing members must remain hydrated to this Molex specification.

**NOTE:** Once flexing members are installed, such as mounting ears into a panel, the hygroscopic properties of nylon are no longer a concern, as no additional flexing is required.

## Moisturization methods

There are two moisturization methods used by Molex. The method selected is dependent on the nylon material color.

### Pad and Bag Method – for black nylon parts

1. Parts to be moisturized are placed inside a Ziploc or open style polybag within carton.
2. For moisturization a 12" x 12" absorbent pad, Molex Part # 46996-2011 or 88596-1016, is used. Fold pad over twice and place in a suitable container.
3. Moisturize pad with deionized water per amounts specified below in moisturization ratios. If excess water is not absorbed by one pad, additional pads may be required. 125 mL is the maximum recommended water content per pad.
4. Insert moisturized pad into Ziploc bag, Molex Part # 46996-2010 or 88596-0969, having perforated flutter vents and seal bag.
5. Place perforated bag with moisturized pad directly on top of parts inside polybag.
6. Seal Ziploc bag or use twist lock closure for polybag to retain moisture inside of bag.

**Moisturization without pad – for all other nylon parts**

1. Parts to be moisturized should be inside a Ziploc or open style polybag within carton.
2. Add deionized water directly into bag of parts per amounts specified below in moisturization ratios.
3. Seal Ziploc bag or use twist lock closure for polybag to retain moisture inside of bag.

**What our customers should do**

Once a connector housing is removed from its packaging, Molex no longer has control of the part's moisture content. Customers can assure the quality of their susceptible parts with the following procedures:

1. Adhere to the advisory information on Molex packaging.
2. Re-moisturize susceptible parts per the moisturization methods described above. This should be done as needed depending on the humidity levels of the ambient environment.

Typically, a nylon connector housing will be sufficiently moisturized after storage in a moisture-rich environment for twenty-four hours.

**Hydration guidelines**

- When moisturizing, do so using deionized water only.
- Close and seal moisturized bags immediately after the addition of deionized water.

**Moisturizing ratios**

For 2.5% moisturization, add approximately 25 ml deionized water per kilogram of parts, rounded to the nearest 25 ml.

<b>Kilograms of parts</b>	<b>ml deionized water</b>	<b>Kilograms of parts</b>	<b>ml deionized water</b>	<b>Kilograms of parts</b>	<b>ml deionized water</b>
0.5	25	5.0	125	9.5	250
1.0	25	5.5	150	10.0	250
1.5	50	6.0	150	10.5	275
2.0	50	6.5	175	11.0	275
2.5	75	7.0	175	11.5	300
3.0	75	7.5	200	12.0	300
3.5	100	8.0	200	12.5	325
4.0	100	8.5	225		1.0 kg = 2.2 lb.
4.5	125	9.0	225		29.6 ml = 1.0 oz

**For additional information**

For more specific information on proper moisturizing of Molex's nylon products, contact your local Molex representative.