Product Description
LOCTITE LIOFOL LA 7660 adhesive with TYCEL 7276 curing agent is a commercial, two-component, solventless, polyurethane adhesive for flexible packaging laminating. The cured adhesive is optically clear, odor free and elastic.

Target Application
Designed for faster cure than standard solventless products and for use on laminations containing high slip films. This product can be applied at line speeds in excess of 800 ft/min. This system can be used for film/film and film/foil food packaging laminations.

Other Applications
This adhesive also can be used for general-purpose food packaging laminations, health care, pharmaceutical and cosmetic applications.

FDA Status
All components of this adhesive system compositionally comply with the FDA 21 Code of Federal Regulation 175.105.

Typical Properties

<table>
<thead>
<tr>
<th>Adhesive</th>
<th>Curing Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCTITE LIOFOL LA 7660</td>
<td>TYCEL 7276</td>
</tr>
<tr>
<td>Functionality</td>
<td>Hydroxyl</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear to hazy</td>
</tr>
<tr>
<td>Solids Content</td>
<td>100%</td>
</tr>
<tr>
<td>Viscosity 25°C (77°F)</td>
<td>2,500-3,500 cps</td>
</tr>
<tr>
<td>Weight/Gallon</td>
<td>8.9-9.1 lbs.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt;200°F (&gt;93°C)</td>
</tr>
<tr>
<td>Mix Ratio</td>
<td>1 part by weight 1 part by volume</td>
</tr>
</tbody>
</table>

Adhesive Selection
The selection of the adhesive system, substrates, and process conditions are critical to the success of the final structure. Thorough qualification on your equipment and substrates is recommended before commercial production begins.

Note: Although not common, some high slip containing films, EVA films, PA films and white-pigmented PE films may contribute to the migration of monomeric MDI with this adhesive system. This can have a detrimental effect on the final sealing ability of the lamination and result in anti-seal. You should thoroughly pre-test the laminations.

Adhesive Mixing
This adhesive system requires the use of Meter/Mix/Dispense (MMD) equipment that will automatically measure and mix the correct amounts of adhesive and deliver them to the laminator. Verification that the unit is providing the correct amounts of adhesive and coreactant is recommended prior to startup. If the MMD unit is capable of phasing issues (one material enters the static mixer before the other) verification that each side is being dispensed at precisely the same time is required.

Due to the wide variability of film additives, materials, surface conditions, process conditions, and performance criteria, pretesting on your substrates and production equipment is required to determine if this adhesive system will meet all your needs.

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<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Viscosity (cP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1,600</td>
</tr>
<tr>
<td>30</td>
<td>1,400</td>
</tr>
<tr>
<td>40</td>
<td>1,200</td>
</tr>
<tr>
<td>50</td>
<td>1,000</td>
</tr>
<tr>
<td>60</td>
<td>800</td>
</tr>
<tr>
<td>70</td>
<td>600</td>
</tr>
<tr>
<td>80</td>
<td>400</td>
</tr>
<tr>
<td>90</td>
<td>200</td>
</tr>
</tbody>
</table>

Due to the wide variability of film additives, materials, surface conditions, process conditions, and performance criteria, pretesting on your substrates and production equipment is required to determine if this adhesive system will meet all your needs.
The adhesive is sensitive to moisture. Tanks or large containers such as drums will require nitrogen purging or the attachment of a desiccant dryer. A DRIERITE desiccant unit is supplied (upon request) with the first drum to insure that dry air enters the drum as adhesive is withdrawn. Replacement cartridges are available from W.A. HAMMOND DRIERITE CO. LTD, P.O. Box 460, Xenia, OH 45385. Phone (937) 376-2927; Fax (937) 376-1977.  


**Pot Life**

Typically, the mixed adhesive has a working time of approximately 15-20 minutes. If an equipment shutdown continues beyond this time, clean all the coating rollers in the application station and purge the mixer attached to the meter/mix/dispense unit. Adhesive that is left on the rollers for a long period of time will become extremely difficult to remove.

**Coating Weight**

The coating weight will be dependent upon the film or foil combination, the end use of the lamination, and the thickness of the printing inks. Typically 0.8 – 1.5 lb/ream (1.3 – 2.4 gm/m²) is suggested.

**Combining Nip**

Nip temperatures of 120 - 180°F (49 - 82°C) are generally recommended. Higher nip temperatures may be required depending on the line speeds, thickness, and substrates being bonded.

**Initial Tack**

There will be little or no initial tack with most solventless adhesive systems. Proper tension control during processing and winding will produce a good lamination.

**Appearance Off-line**

Very small bubbles (1/2 mm) between the layers of the lamination are typical off line. With proper winding parameters, the adhesive will flow and the bubbles will dissipate by the following day. To obtain maximum optical properties, a rewind temperature of 85 - 105°F (29-40°C) may be used.

**Curing**

The laminate normally can be rewound and slit after 1 day at room temperature (77°F/25°C). To achieve maximum chemical and thermal resistance, allow 7 days of storage at room temperature. Cure rate may depend on film combination. If rolls are subjected to low temperatures, a substantially longer cure time may result.

**Clean Up**

Clean up is accomplished with solvents such as ethyl acetate, methyl ethyl ketone, methylene chloride or acetone. Care should be taken to insure the solvent used would not damage the rubber rollers in the application station. Protective gloves should be worn and proper ventilation is recommended.

**Storage and Shelf Life**

These products have a storage life of twelve months from date of manufacture. They should be held at normal warehousing temperatures and stored in the original, unopened containers. Containers of the adhesive or curing agent should not remain open for an extended period of time. Material from opened containers should be consumed within a short period. It is necessary to use all the adhesive, once the container is opened, unless there is means of purging the container with dry nitrogen.
If exposed to below freezing temperatures, these products may solidify. Large containers (drums and pails) may be slow to reliquify. Slight warming at 104 - 122°F (40 - 50°C) will aid the process. Freezing and thawing have no effect on the performance of this product.

Handling Information
The adhesive, as received, has chemically active isocyanate groups that will react with water, alcohols, amines, and similar materials containing active hydrogen groups. Reseal containers and keep them tightly closed to maximize the storage life. Nitrogen purging of original containers will have a similar effect. Upon request, a DRIERITE® desiccant unit will be supplied with the first drum to ensure that dry air enters the drum as adhesive is withdrawn. Replacement cartridges are available from W.A. HAMMOND DRIERITE CO. LTD. P.O. Box 460, Xenia, OH 45385 Phone (937) 376-2927; Fax (937) 376-1977. http://www.drierite.com/.

Positive fresh air ventilation is necessary: otherwise use air supplied hood or chemical facemask. Avoid prolonged breathing of vapors and mists. In case of persistent coughing, call a physician.

Keep adhesive away from heat, sparks and open flame. Avoid prolonged contact with skin. Wash hands thoroughly after using or before smoking or eating.

Harmful or fatal if swallowed. If swallowed, DO NOT INDUCE VOMITING. Drink one or two glasses of water, and call a physician IMMEDIATELY. Refer to the Safety Data Sheet on these products. If the Safety Data Sheet is not in your file, request one from:

Henkel LinkPoint, llc 1025 SE 5th St. Hialeah, FL 33010 Telephone: +305-903-9191 Fax: +305-871-2247

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