The HI-KOTE™ coating technology provides the aerospace fasteners industry with high performance. This family of coatings has been part of the HI-SHEAR range for more than 30 years. It is used on millions of fasteners, across hundreds of programs worldwide. LISI AEROSPACE has made some large investment in R&D and after more than 8 years of intensive research we are proud to offer the new “green” HI-KOTE™ 1 NC and HI-KOTE™ 4 NC coatings. These coatings are delivering the same high performance and comply with the latest environmental requirements, making them the worthy successors of our well known HI-KOTE™ 1 and HI-KOTE™ 2 first generation coatings.

**GENERAL PRESENTATION**

**DESCRIPTION OF HI-KOTE™ NC COATINGS**

HI-KOTE™ NC coatings are aluminum filled phenolic resin formulations developed to yield a permanent bonded dry film 5 to 13 µm thick. The chromate free corrosion inhibitors incorporated into the HI-KOTE™ NC coatings system provides corrosion protection for the assembly in which the fasteners are installed.

**BENEFITS AND KEY PROPERTIES**

<table>
<thead>
<tr>
<th>SUBSTRATE</th>
<th>Titanium alloys, Corrosion Resistant Steel (CRES) and nickel based alloys such as Inconel™718</th>
</tr>
</thead>
<tbody>
<tr>
<td>GALVANIC CORROSION PROTECTION</td>
<td>Prevents galvanic corrosion between fasteners and aluminum alloy structures</td>
</tr>
<tr>
<td>LUBRICATING PROPERTIES</td>
<td>Reduces friction in threads and interference fit assemblies</td>
</tr>
<tr>
<td>RESISTANCE TO CHEMICALS</td>
<td>Resistant to aggressive chemicals (paint strippers, jet fuel, hydraulic fluids, cleaning solvents)</td>
</tr>
<tr>
<td>STRONG ADHESION TO SUBSTRATE</td>
<td>Provide ductility which prevents cracking caused by part expansion, contraction of the substrate or shock</td>
</tr>
<tr>
<td>EXCELLENT AIRCRAFT PAINT ADHESION</td>
<td>Improves aircraft external paint adhesion on fastener heads</td>
</tr>
<tr>
<td>NO HYDROGEN EMBRITTLEMENT</td>
<td>Eliminates potential for hydrogen embrittlement by the method of application</td>
</tr>
</tbody>
</table>
HI-KOTE™ 1 NC COATING

HI-KOTE™ 1 NC coating is a direct replacement of chromate HI-KOTE™ 1 coating for pins, lockbolts, nuts, collars or other components. Often combined with cetyl alcohol, HI-KOTE™ 1 NC coating is particularly recommended for interference fit assemblies.

HI-KOTE™ 1 NC coating meets the following aerospace specifications requirements:

- BMS 10-85 Boeing Material Specification
- EN 4473 type II European ASD-STAN Standard
- NAS 4006 National Aerospace Standard
- HS294 LISI AEROSPACE HI-SHEAR standard

PROTECTION AGAINST GALVANIC CORROSION OF AIRCRAFT STRUCTURES

HI-KOTE™ NC coatings composition prevents the galvanic corrosion of aluminum alloy structures in contact with titanium alloys, Corrosion Resistant Steel (CRES) or nickel based alloys fasteners.

DECREASES INSTALLATION LOADS IN INTERFERENCE FIT ASSEMBLIES

**HI-KOTE™ 1 NC coating demonstrates outstanding frictional performance in high interference assembly as per EN4473 standard.**
HI-KOTE™ 4 NC COATING

HI-KOTE™ 4 NC coating has the same properties as HI-KOTE™ 1 NC coating, but contains additional lubricating agents in the formulation in order to avoid the use of a secondary lubricant. HI-KOTE™ 4 NC coating has proved very successful as a new “green” coating solution for nuts, but this coating can also be used without cetyl alcohol on pins/rivets for medium-low interference fit application. HI-KOTE™ 4 NC coating is an excellent REACH compliant alternative to first generation chromate HI-KOTE™ 2 coating and MoS₂ based Solid Film lubricant which contain heavy metals such as lead and/or antimony.

HI-KOTE™ 4 NC coating meets the following aerospace specifications requirements:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS 10-85</td>
<td>Boeing Material Specifications</td>
</tr>
<tr>
<td>EN 4473 type IV</td>
<td>European ASD-STAN Standard</td>
</tr>
<tr>
<td>NAS 4006</td>
<td>National Aerospace Standard</td>
</tr>
<tr>
<td>HS294</td>
<td>LJSI AEROSPACE HI-SHEAR standard</td>
</tr>
</tbody>
</table>

HI-KOTE™ 4 NC coating shows frictional performance equivalent to widely used MoS₂ based dry film lubricants such as MOLYKOTE™ 3400A Aero, TIOLUBE™ 460 and HI-KOTE™ 2 coating.
HI-KOTE™ coatings by LISI AEROSPACE are available in the USA from Torrance (HI-SHEAR CORP) and in Europe from Saint-Ouen-L'Aumône, Paris (BLANC AERO INDUSTRIES).

LISI AEROSPACE has implemented a licensing and qualification system to ensure constant high performance and quality control for all products coated with HI-KOTE™ coatings. Please contact LISI AEROSPACE to become a licensee for in house application or choose to use one of our qualified applicators.

The list of qualified applicators is available on LISI AEROSPACE website.

**HI-KOTE™ NC COATINGS**

**NEW GREEN ALTERNATIVES TO FIRST GENERATION HI-KOTE™ COATINGS**

<table>
<thead>
<tr>
<th>HI-KOTE™ REFERENCE</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>hi-kote™ 1</strong></td>
<td>• General use for various fasteners</td>
</tr>
<tr>
<td></td>
<td>• Often combined with cetyl alcohol</td>
</tr>
<tr>
<td><strong>hi-kote™ 2</strong></td>
<td>• Solid Film Lubricant</td>
</tr>
<tr>
<td><strong>hi-kote™ 1NC</strong></td>
<td>• Direct Chromate free replacement of HI-KOTE™ 1 coating</td>
</tr>
<tr>
<td><strong>hi-kote™ 4NC</strong></td>
<td>• Enhanced lubrication for use without cetyl alcohol</td>
</tr>
<tr>
<td></td>
<td>• Alternative to chromate HI-KOTE™ 2 coating and MoS₂ based Solid Film Lubricant</td>
</tr>
</tbody>
</table>

*HI-KOTE™ is a trademark of HI-SHEAR Corp.*

*Inconel™ is a trademark of Special Metals Corp.*

*MOLYKOTE™ is a trademark of DOWN CORNING Corp.*

*TIOLUBE™ is a trademark of TIODIZE Co, Inc.*
Our locations worldwide

Bangalore
City of Industry
Izmir
Montréal
Rugby
Saint-Brieuc
Saint-Ouen L’Aumône
Tanger
Torrance
Vignoux-sur-Barangeon
Villefranche-de-Rouergue

STARLITE™ nuts
Standard nuts
Special nuts
Nutplates
Hi-LOK™ / HI-LITE™ system
PULL-IN™ / PULL-STEM™ pins
Lockbolt
STL™ sleeve fasteners
Standard threaded fasteners
Special threaded fasteners
Inserts and studs
Critical parts
Lining fasteners
Clip-nut
Panel fasteners
Spacer / Stand-off
Hi-SET™ / ELIP-NUT™ blind nuts
Blind nuts / Blind bolts
Safety locking & Latches
Temporary fasteners
Tooling