



# LOCTITE<sup>®</sup> C5-A<sup>®</sup> Copper Based Anti-Seize

September 2009

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> C5-A<sup>®</sup> Copper Based Anti-Seize provides the following product characteristics:

<b>Technology</b>	Anti-Seize
<b>Appearance</b>	Copper colored <sup>LMS</sup>
<b>Appearance (Condition)</b>	No lumps, coarse particles or separation <sup>LMS</sup>
<b>Appearance (Material)</b>	Colloidal copper and petroleum grease present <sup>LMS</sup>
<b>Cure</b>	Non-curing
<b>Application</b>	Lubrication

LOCTITE<sup>®</sup> C5-A<sup>®</sup> Copper Based Anti-Seize provides a shield against high temperature seizing and galling. All mated parts, studs, bolts, flanges and gaskets, remove more easily and in cleaner and better condition. This product can be used on copper, brass, cast iron, steel, all alloys including stainless steel, all plastics and all non-metallic gasketing materials. Typical applications include original equipment and maintenance, and equipment associated with petroleum chemicals, steel mills, power plants, marine and foundries. This product is typically used in applications with an operating range of -29 °C to +982 °C.

## TYPICAL PROPERTIES

Specific Gravity @ 25 °C	1.2 to 1.4 <sup>LMS</sup>
Density @ 25 °C, g/ml	1.27
Flash Point - See MSDS	
Solids/Non-Volatile Content, %	40
Penetration, ISO 2137, 1/10 mm	325 to 375 <sup>LMS</sup>

## TYPICAL PERFORMANCE

An anti-seize lubricant used on a bolt helps to develop greater clamp load for the same torque compared to an unlubricated bolt. An additional benefit is greater uniformity in clamp load among a series of bolts. The relationship between torque and clamp load is expressed in the following equation:

$$T = K \times F \times D$$

- T = Torque (N·m, lb.in, lb.ft)
- K = Torque coefficient or nut factor, determine experimentally
- F = Clamp load (N, lb.)
- D = Nominal diameter of bolt (mm, in.)

Torque coefficient, k:	
12.7 mm steel bolts (grade 8) and nuts (grade 5)	0.16
12.7 mm steel bolts (grade 8) and nuts (grade 5), solvent cleaned, not lubricated	0.27

(In critical applications, it is necessary to determine the K values independently. Henkel corporation makes no warranty of specific performance on any individual fastener)

## GENERAL INFORMATION

**This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a lubricant for chlorine or other strong oxidizing materials.**

**For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).**

## Directions for use:

1. For best performance the mating surface should be clean and free of grease.
2. **Note: When grinding or wire brushing, use a dust mask.** Dust from cleaning threads may contain metal compounds. Inhalation may cause lung injury or other harm.
3. Apply thin coating to threads and flats of nuts and bolts, assemble.

## Loctite Material Specification <sup>LMS</sup>

LMS dated September 26, 2005. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

## Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

**Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties.**

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.



**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$   
kV/mm  $\times$  25.4 = V/mil  
mm / 25.4 = inches  
 $\mu\text{m} / 25.4 = \text{mil}$   
N  $\times$  0.225 = lb  
N/mm  $\times$  5.71 = lb/in  
N/mm<sup>2</sup>  $\times$  145 = psi  
MPa  $\times$  145 = psi  
N·m  $\times$  8.851 = lb·in  
N·m  $\times$  0.738 = lb·ft  
N·mm  $\times$  0.142 = oz·in  
mPa·s = cP

**Note**

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

**Trademark usage**

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 1.4