

**Technical Bulletin****E-GRADE® TEA amine**

**E-GRADE® TEA amine** is a clear, viscous, hygroscopic tertiary amine with a mild ammoniacal odor.

**APPLICATIONS** E-GRADE® TEA amine is primarily used to formulate strippers and cleaners for the electronics industry.

**SALES SPECIFICATIONS**

<u>Property</u>	<u>Specifications</u>	<u>Test Method*</u>
Appearance	Clear and substantially free of suspended matter	ST-30.1
Color, Pt-Co	75 max.	ST-30.12
Diethanolamine, wt%	0.099 max.	ST-35.99
Equivalent Weight	148 – 150	ST-5.5
Metals, ppb		ICP-MS or GFAA
Aluminum (Al)	50 max.	
Antimony (Sb)	50 max.	
Arsenic (As)	50 max.	
Barium (Ba)	50 max.	
Cadmium (Cd)	50 max.	
Chromium (Cr)	50 max.	
Cobalt (Co)	50 max.	
Copper (Cu)	50 max.	
Gallium (Ga)	50 max.	
Germanium (Ge)	75 max.	
Gold (Au)	50 max.	
Iron (Fe)	50 max.	
Lead (Pb)	50 max.	
Lithium (Li)	50 max.	
Magnesium (Mg)	50 max.	
Manganese (Mn)	50 max.	
Nickel (Ni)	50 max.	
Potassium (K)	30 max.	
Silver (Ag)	50 max.	
Sodium (Na)	100 max.	
Strontium (Sr)	50 max.	
Tin (Sn)	50 max.	
Titanium (Ti)	50 max.	
Zinc (Zn)	30 max.	
Triethanolamine, wt%	99.5 min.	ST-35.99
Water, wt%	0.2 max.	ST-31.53, 5

\*Methods of Test are available from Huntsman Corporation upon request.

**ADDITIONAL INFORMATION****Regulatory Information**

DOT/TDG Classification	Not regulated
HMIS Code	1-1-0
CAS Number	102-71-6
TSCA Inventory	Yes
WHMIS Classification	D2B
Canadian DSL	Yes

**Typical Properties**

Boiling point, °C (°F)	360 (680)
Flash point, CC, °C (°F)	190 (374)
Melting point, °C (°F)	21 (70)
pH	11 [Basic]
Specific gravity, 20/20°C	1
Vapor pressure, mm Hg, 20°C (68°F)	< 0.01
Viscosity, cSt, 25°C (77°F)	527
Water solubility	> 10 [Soluble]

### **TOXICITY AND SAFETY**

For additional information on the toxicity and safe handling of this product, consult the Material Safety Data Sheet prior to use of this product.

### **HANDLING AND STORAGE**

E-GRADE<sup>®</sup> TEA amine may be satisfactorily stored in stainless steel tanks using stainless steel pipes and pumps.

For longer term color stability, it is recommended that the product be stored under an inert atmosphere. Solid sediment may form upon standing. There should be circulation in the storage vessel to keep solids suspended.

Low pressure steam coils in storage tanks and heat tracing of transfer lines should be provided in cases where low environmental temperatures may make pumping of the product difficult.

### **BIODEGRADABILITY AND ENVIRONMENTAL SAFETY**

E-GRADE<sup>®</sup> TEA amine undergoes moderate biodegradation and is not expected to be persistent in the environment.

### **AVAILABILITY**

Product is available in tank wagons and 55-gallon plastic drums of 520 pounds (236 kilograms) net weight. Small samples are available upon request. Samples are available by contacting our sample department at 1-800-662-0924.

1161-0412

**Huntsman Corporation  
Business Offices**  
10003 Woodloch Forest Dr.  
The Woodlands, TX 77380  
(281) 719-6000

**Huntsman Advanced Technology  
Center**  
**Technical Service**  
8600 Gosling Rd.  
The Woodlands, TX 77381  
(281) 719-7780

**Samples 1-800-662-0924**

**[www.huntsman.com](http://www.huntsman.com)**

**Copyright © 2007, 2008, 2011, 2012 Huntsman Corporation or an affiliate thereof. All rights reserved.**  
EGRADE<sup>®</sup> is a registered trademark of Huntsman Corporation or an affiliate thereof in one or more, but not all countries.

Huntsman Corporation warrants only that its products meet the specifications stated herein. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications. While all the information presented in this document is believed to be reliable and to represent the best available data on these products, HUNTSMAN MAKES NO WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT OF ANY THIRD PARTY, OR WARRANTIES AS TO QUALITY OR CORRESPONDENCE WITH PRIOR DESCRIPTION OR SAMPLE, AND ANY USER OF PRODUCTS DESCRIBED HEREIN SHOULD CONDUCT A SUFFICIENT INVESTIGATION TO ESTABLISH THE SUITABILITY OF ANY PRODUCT FOR ITS INTENDED USE AND ASSUMES ALL RISK AND LIABILITY WHATSOEVER RESULTING FROM THE USE OF SUCH PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES. Product(s) described in this publication may be hazardous and/or toxic and require special precautions in handling. For all product(s) described herein, the user should obtain from Huntsman detailed information on hazards and/or toxicity, together with proper shipping, handling, and storage procedures, and should comply with all applicable safety and environmental standards. The behavior, hazards and/or toxicity of the product(s) referred to in this publication in manufacturing processes and their suitability in any given end-use environment are dependent upon various conditions such as chemical compatibility, temperature, and other variables, which may not be known to Huntsman. It is the sole responsibility of the user of such product(s) to evaluate the manufacturing circumstances and the final product(s) under actual end-use requirements and to adequately advise and warn future purchasers and users thereof.