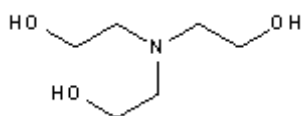
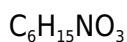
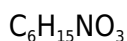


**PRODUCT CODE: 191750****Triethanolamine (BP, Ph. Eur., USP-NF) pharma grade**

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M.= 149,19

CAS [102-71-6]

EINECS 203-049-8

TARIC 2922 15 00 00

**SYNONYMS:** 2,2',2''-Nitrilotriethanol, 2,2',2''-Trihydroxytriethylamine, TEA, Tris (2-Hydroxyethyl)Amine, Trolamine

**PHYSICAL DATA:** liquid, Clear, Colourless, Miscible with water • Hygroscopic • D 20/4 1,126 • M.P.: 21 °C • B.P.: 335,4 °C • pH10 - 13 • n<sub>20</sub>/D : 1,4852 • Flash P.:179 °C • Ign. T.:335 °C • Vap. press. (20 °C) 0,02 hPa •

**BIBLIOGRAPHY:** Merck Index **12**, 9.798 13, 9.739 Sax **TKP500** • Safety **2** , **3426 B** • Kühn-Birett **T 15** • Ullmann **(5.)10** , 1 • Beilstein **4** , **285 II** , **729 III** , **695 IV** , **1522** • BRN 1699263 • Fieser **11196** • BP.**2018** • USP -**NF 36** • Ph. Eur. **9.0** **9.0** (2017) •

**HAZARDOUS:** RTECS: KL 9275000 • LD50 oral rat 8.000 mg/kg • LD50 ipr mus 1.450 mg/kg VLA-ED 5 mg/m3

**WEIGHT/VOLUME INFORMATION:** 1l~1,124 kg 1kg~0,89 l

**OBSERVATIONS:** Product controlled as dual purpose. • Storage away from direct light. •

**SPECIFICATIONS:**

Assay (Acidim.)

99,0-103,0 %

Identity :

Identity according to Pharmacopoeias:

passes test

Density at 20/20	1,120-1,130
Density at 25/25	1,120-1,128
Refractive Index n <sub>20/D</sub>	1,482 - 1,485

#### **Maximum limit of impurities**

Appearance of solution	passes test
Residue on ignition (as SO <sub>4</sub> )	0,05 %
Residual solvents (Ph.Eur/USP)	passes test
Related substances	
Ethanolamine	0,1%
Diethanolamine	0,5%
Total impurities	1,0%
N-Nitrosodiethanolamine	24 ppb
Water (H <sub>2</sub> O)	0,5 %
Heavy metals (as Pb)	0,001%

#### Elemental impurities (ICH Q3D):

##### Class 1

Cd	0,5 ppm
Pb	0,5 ppm
As	1,5 ppm
Hg	1,5 ppm

##### Class 2A

Co	5 ppm
V	10 ppm
Ni	20 ppm

##### Class 2B

Tl	0,8 ppm
Au	10 ppm
Pd	10 ppm
Ir	10 ppm
Os	10 ppm
Rh	10 ppm
Ru	10 ppm
Se	15 ppm
Ag	15 ppm
Pt	10 ppm

##### Class 3

Li	55 ppm
Sb	120 ppm
Ba	140 ppm
Mo	25 ppm
Cu	250 ppm
Sn	600 ppm
Cr	25 ppm