

## Technical Data Sheet BEROLAMINE 10 (BA-10)

### General

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|--|--|
| Average Molecular Weight 150 gmol <sup>-1</sup>                                | hydroxyethyl)amino]ethyl]imino]bisethanol and 2,2'-iminodiethanol  |
| Ethanol, 2,2',2''-nitri]otris- CAS No. 102-71-6                                |  |
| Ethanol, 2,2'-iminobis- CAS No. 111-42-2                                       |  |
| Ethanol, 2,2' -{[2-((2-hydroxyethyl)amino)ethyl]-imino}bis- CAS No. 60487-26-5 | Berolamine-10 (BA-10) contains a high level of TEA (triethanolamine) and is mainly used as a grinding agent for cement to reduce energy consumption. |
| IUPAC name: Reaction mass of 2,2',2''-nitri]otriethanol and 2,2'-[2-[(2-       |  |

### Sales Specification

| Characteristic       | Unit | Specification      | Methods of Analysis |
|----------------------|------|--------------------|---------------------|
| Appearance           | -    | Light brown liquid | 200                 |
| Monoethanolamine     | w%   | max 0.5            | 568                 |
| Diethanolamine       | w%   | max 30             | 568                 |
| Triethanolamine      | w%   | min 50             | 568                 |
| Higher ethanolamines | w%   | max 30             | 568                 |
| Water                | w%   | max 0.5            | 305                 |

Methods of Analysis are available upon request.

In case of dispute, the listed Method of Analysis will be used as reference methods.

### Physical and Chemical Properties

| Property                     | Value   | Property                               | Value                            |
|------------------------------|---|--|----------------------------------|
| Form                         | viscous liquid  | pH                                     | 11 at 5 % solution               |
| Colour                       | dark  | Melting point/freezing point           | < -23 °C at 1 013 hPa            |
| Odour                        | ammoniacal  | Boiling point/boiling range            | ca. 336 °C at 1 013 hPa          |
| Flammability (liquids)       | Not classified as a flammability hazard                 | Flash point                            | 179 °C at 1 013 hPa              |
| Explosive properties         | Not explosive   | Ignition temperature                   | > 170 °C                         |
| Oxidizing properties         | The substance or mixture is not classified as oxidizing | Vapour pressure                        | 0,00009 hPa at 20 °C             |
| Water solubility             | completely soluble                                      | Relative vapour density                | 3,5                              |
| Solubility in other solvents | Miscible with ethanol                                   | Density                                | 1 120 kg/m <sup>3</sup> at 20 °C |
|                              |   | Relative density                       | 1,12 at 20 °C                    |
|                              |   | Partition coefficient: n-octanol/water | log Pow: -1,0 at 25 °C           |
|                              |   | Viscosity, dynamic                     | 934 mPa.s at 20 °C               |

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