BA BUTYL ACRYLATE

Cas number : 141-32-2  EINECS number : 205-480-7

CHEMICAL FORMULA

\[
\text{CH}_2 \equiv \text{CH} \cdash \text{C} \equiv \text{O} \\
\text{O} \cdash \text{CH}_2 \cdash \text{CH}_2 \cdash \text{CH}_2 \cdash \text{CH}_3
\]

Molecular weight : 128

OTHER NAMES

Acrylic acid, n-butyl ester
2-Propenoic acid, n-butyl ester

SPECIFICATIONS (Ref. A004FS001)

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Colour (APHA)</td>
<td>10 maximum</td>
</tr>
<tr>
<td>Purity by gas-phase chromatography</td>
<td>99.5 % minimum</td>
</tr>
<tr>
<td>Water content</td>
<td>500 ppm maximum</td>
</tr>
<tr>
<td>Acidity (expressed as acrylic acid)</td>
<td>100 ppm maximum</td>
</tr>
<tr>
<td>Inhibitor content (MEHQ)*</td>
<td>10 to 20 ppm</td>
</tr>
</tbody>
</table>

GB/T17529.4-1998

* For some destinations, inhibitor standard is increased:
Specifications, ref. A004FS009 (Drums), inhibitor (MEHQ) 50 ± 10 ppm
All other properties and specifications remain the same

HANDLING AND SAFETY ADVISES:
We advise you to read carefully the safety data sheet.
Butyl Acrylate

MAIN PHYSICAL CHARACTERISTICS

- Molecular weight ................................... 128
- Boiling point, at 1013 mbar ....................... 147°C
- Freezing point .................................... -64°C
- Specific gravity at 20°C ....................... 0.898
  at 25°C ....................... 0.894
- Refractive index, n_D at 20°C ....................... 1.419
  at 25°C ....................... 1.416
- Viscosity at 20°C ............ 0.900 mPa.s
  at 25°C ............ 0.808 mPa.s
- Solubility water in BA at 20°C .............. 0.7 g/100 g
  BA in water at 20°C ....................... 0.2 g/100 g
- Specific heat in liquid state ....................... 1.96 kJ/kg°C
- Latent heat of vaporisation ........................ 297 kJ/kg
- Heat of polymerisation ............................. 604 KJ/kg
- Homopolymer glass transition temperature ....... -54°C
- Flash point in open cup ................. 48°C
  in closed cup ............... 39°C
- Lower explosion limit in volume .............. 1.5 %
- Vapour pressure at 20°C ............ 5.3 mbar
  at 30°C ............ 10 mbar
  at 50°C ............ 29 mbar
- Auto-ignition temperature .................... 297°C

CHEMICAL PROPERTIES

- Addition reactions to the double bond
- Ability to polymerise and copolymerise
- Values for the copolymerisation reactivity ratios r_1, r_2 of butyl acrylate (M_1) with various monomers (M_2) have been calculated using the Alfred & Price formula

\[
\begin{align*}
\text{Styrene} & : r_1 = 0.07r_2 = 0.45 \\
\text{Methyl methacrylate} & : r_1 = 0.34r_2 = 1.92 \\
\text{Vinyl acetate} & : r_1 = 4.95r_2 = 0.04
\end{align*}
\]

PACKAGING AND STORAGE

Butyl acrylate is delivered :
- in 24 and 53 tons protected ordinary steel rail tankcars
- in 25000 to 32000 litres stainless steel road tankcars
- in ~200 litres ordinary plastic drums, loaded at 180 Kg.

The standard inhibition is 15 ppm Monomethyl Ether of HydroQuinone (MEHQ).
With this inhibitor, the product should be stored indoors at a temperature of no more than 25°C and away from light. It must also be stored under air atmosphere, as the presence of oxygen is essential to activate the stabiliser.

Under these conditions, the product is commercially guaranteed for six months after delivery.

Butyl acrylate is a flammable product, and the usual precautions must be taken in handling it.

USES

Butyl acrylate is used in the composition of copolymers, with various industrial applications, such as :

- resins and dispersions for paints, varnishes and inks, glues and adhesives
- aqueous dispersions for non-woven fabrics, textiles, paper and leather
- cleaning and waxing products
- plastics and synthetic resins
- synthetic rubbers and lattices
- organic synthesis.

The information contained in this document is based on trials carried out by our Research Centres and data selected from the literature, but shall in no event be held to constitute or imply any warranty, undertaking, express or implied commitment from our part. Our formal specification define the limit of our commitment. No liability whatsoever can be accepted by ARKEMA with regard to the handling, processing or use of the product or products concerned which must in all cases be employed in accordance with the relevant laws and/or regulations in force in the country or countries concerned.

Arkema (Taixing) Chemicals Co., Ltd
Room 610,No.1,Futai Road Economic Development Zone,
Taixing City, Jiangsu Province 225400 Taixing China
www.arkema.com

Arkema Company Limited
Unit 4112-4116, Level 41, Tower 1, Metroplaza,
223 Hing Fong Road, Kwai Fong,
New Territories, Hong Kong