Primary Amine Monomers

The following monomers can be used to prepare polymers and copolymers containing a pendant primary amine functionality, which can be used to facilitate further modification of the polymers. These compounds are offered as pure, crystalline products that can be used in a variety of free-radical polymerization reactions. Their neutralized polymers are very nucleophilic and are quite reactive with electrophilic reagents.

These products can be converted to many different types of more highly functionalized monomer intermediates via standard reactions such as alkylations, condensations, and heterocycle formations. They may also be co-polymerized with a variety of comonomers, thus facilitating the synthesis of many types of amine-containing polymers. They have been used to prepare tightly cross-linked polymers using bis-electrophiles, with convenient control of reaction rate via reaction pH.

Polysciences offers several other reactive monomers that contain useful functional groups. Consult our catalog for examples.

N-(3-Aminopropyl)methacrylamide hydrochloride

This water-soluble monomer is resistant to hydrolysis, yet has a primary amine group that can undergo a variety of reactions under mild conditions. It can be used to form waterswellable, but insoluble polymers. Applications include surface modifications for biomedical materials, solid-state synthesis supports and sensor membrane fabrication.

Typical Properties:

- Appearance: White solid
- Purity: > 98%
- Melting Point: 125°C
- Density @ 25°C [He pycnometer]: 1.19

2-Aminoethyl methacrylate hydrochloride

Applications of this monomer include the preparation of specialty ion-exchange resins and solid supports for the immobilization of biomolecular ligands.
Care must be taken to avoid neutralization of this product prior to polymerization. If neutralized, the monomer rearranges to form 2-hydroxyethylmethacrylamide. However, once the polymer is formed, the polymer backbone presents a steric hindrance to prevent the rearrangement. Thus, the free-amine polymers of this product are quite stable.

**Typical Properties:**
- **Appearance:** White solid
- **Purity:** > 98%
- **Melting Point:** 121-124°C
- **Density @ 25°C (He pycnometer):** 1.26

**Ordering Information:**

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<th>Description</th>
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**References:**

**N-(3-Aminopropyl)methacrylamide hydrochloride**

**2-Aminoethyl methacrylate hydrochloride**

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