

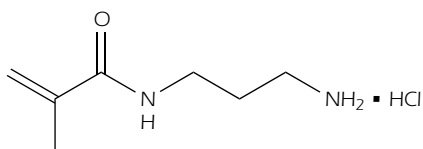
Primary Amine Monomers

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



C₇ H₁₄ N₂ O₄ ·HCL MW 178.7

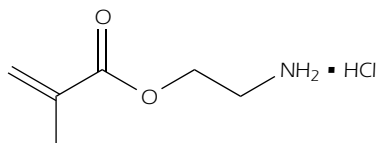
CASRN [72607-53-5]

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 water-swelling, 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



C₆ H₁₁ NO₂ ·HCL MW 166.6

CASRN [2420-94-2]

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:

Cat. #	Description	Size
21200	N-(3-Aminopropyl)methacrylamide hydrochloride	5 grams Available in bulk quantities- Request quotation
21002	2-Aminoethyl methacrylate hydrochloride	10 grams Available in bulk quantities- Request quotation

To Order:

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

- As a crosslinking site, using gluteraldehyde, in copolymers: Login,R.B., Shih, J.S., Chuang, J.C. (ISP Investments, Inc.), PTC Int. Appl., WO 93 22, 380 (C.A. [120 P 272208e](#)).
- As a site in copolymers for further functionalization with 4-benzoyl-benzoyl chloride: Smithson, R.L.W., Evans, D.F., Monfils, J.D., Guire, P.E., (University of Minnesota), *Colloids, Surf B*, 1 (6) 349-355 (1993) (C.A. [120 86345x](#)).
- To produce a homopolymer with surface modification for hemocompatibility: Bamford, C.H., AHLamae, K.G., *Polymer*, 37 (22) 4885-4889 (1996) (C.A. [126 11518w](#)).
- In copolymers for use as a solid support in peptide synthesis: Sparrow, J.T., Knieb-Cordonier, N.G., Obeyesekere, N., *Pept. Res.*, 9(6) 297-301 (1996) (C.A. [126 251377f](#)).
- In copolymers for contact lens production, to provide antibacterial properties: Vanderlaan, D.G., Orr, S.B. (Johnson and Johnson Vision Products), U.S. Pat. 5,514,732 May, 1996.
- For use in optical sensors for pH and ionic strength: Alder, A., Barnard, S., Berger, J., Blom, N., Rouilly, M. (Ceiba-Geigy A-G) PCT Int. Appl. WO 9,530,148 Nov., 1995.

2-Aminoethyl methacrylate hydrochloride

- For use in capillary electrophoresis: Lin, Q., Lin, F., Hartwick, R.A., (Duke University), *J. Liq. Chromatog. Relat. Technol.*, 20 (5) 707-718 (1997). (C.A. [126 340665c](#)).
- For use as a paper-strengthening copolymer additive: Kimura,Y., Kasuya,T., Hamada, M., (Harima Chems. Inc.) Jpn Kokai Tokkyo Koho, Japanese Patent 02,145,897 June 5, 1990.(C.A. [113 p193772m](#)).
- For the production of a lithographic electrophotographic plate: Kato, E., Ishii, K. (Fuji Photo Film Co., Ltd.) Jpn Kokai Tokkyo Koho, Japanese Patent 02,201,454 August 9, 1990. (C.A. [115 p186392z](#)).
- For use in a hydrophobic copolymer thickening agent: Neff, R.E., Ryles, R.G. (American Cyanamid Co.) Eur. Patent Appl. EP 311,799 April 19, 1989. (C.A. [111 p157272y](#)).
- For use in a copolymer containing heparin fragments as an antithrombogenic biomaterial: Mazid, M.A., Moase, E., Scott, E., Hanna, H.R., Unger, F.M., *J. Biomed. Mater. Res.*, 25 (9), 1169-81 (1991). (C.A. [115 239607h](#)).
- For use in a cationic coagulant copolymer: Kawamori, A., Nakajima, A., Kurokawa, K., (Daiichi Kogyo Seiyaku Co. Ltd.) Jpn Kokai Tokkyo Koho, Japanese Patent 63,267,408 November 4, 1988. (C.A. [111 p28127f](#)).

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