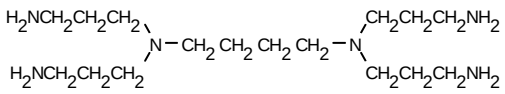
Dendritic Macromolecules

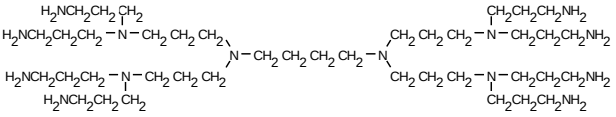
Symmetrical Dendrimers[1]

Dendrimers are being utilized as nanoscale catalysts,[2] nanoscopic reactors, micelle mimics, MRI agents, immunodiagnostic agents, gene delivery vectors, nanoantennae, and encapsulating agents.[3,4]

(1) For a review, see: Tomalia, D.A. *Aldrichimica Acta* **1993**, *26*, 91. (2) Sanders-Hovens, M.S.T.H. et al. *Polym. Mater. Sci. Eng.* **1995**, *73*, 338. (3) Tomalia, D.A. et al. *ibid.* **1995**, *73*, 75. (4) Jansen, J.F.G.A. et al. *ibid.* **1995**, *73*, 123.



46,069-9 **DAB(PA)4, Polypropylenimine tetraamine Dendrimer,** Generation 1.0 **5mL 25mL**



46,072-9 **DAB(PA)8, Polypropylenimine octaamine Dendrimer,** Generation 2.0 **5mL; 25mL**

46,907-6 **DAB(PA)16, Polypropylenimine hexadecaamine Dendrimer,** Generation 3.0 **1g; 5g**

46,908-4 **DAB(PA)32, Polypropylenimine dotriacontaamine Dendrimer,** Generation 4.0 **1g; 5g**

46,909-2 **DAB(PA)64, Polypropylenimine tetrahexacontaamine Dendrimer,** Generation 5.0 **1g**

The dendrimers above are from DSM Fine Chemicals.

47,045-7 **Starburst™ (PAMAM) Dendrimer,** Generation 4.5, 5 wt. % solution in methyl alcohol **2.5g; 10g**

Contains 128 surface carboxylate groups.

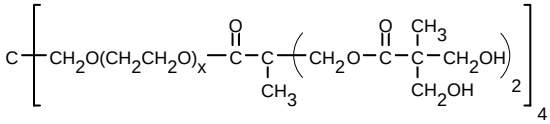
Eleven different Starburst Generations are available from Aldrich.

Gen.	Cat. No.	Gen.	Cat. No.	Gen.	Cat. No
-0.5	41,234-1	1.5	41,239-2	3.5	41,243-0
0	41,236-8	2	41,240-6	4	41,244-9
0.5	41,237-6	2.5	41,241-4	4.5	47,045-7
1	41,238-4	3	41,242-2		

Starburst is a trademark of Dendritech, Inc.

Hyperbranched Macromolecules

These dendrimers[1] show unusually low viscosity-versus-MW profiles.[2] Their formation kinetics[3] and architectural control[4] have been studied.



44,706-4 **Hyperbranched polyol,** Generation 2 **25g**

Generations 3 **(44,707-2)**, *4* **(44,708-0)**, *and 5* **(44,709-9)** *are also available.*

(1) Fréchet, J.M.J. *Science* **1994**, *263*, 1710. (2) Petterson, B.; Sorenson, K. *Proceedings of the 21st Waterborne, Higher-Solids, and Powder Coatings Symposium*, Pt. 2, U. of S. Mississippi, **1994**, 753. (3) Malmstroem, E.; Hult, A. *Macromolecules* **1996**, *29*, 1222. (4) Hawker, C.J.; Chu, F. *Polym. Mater. Sci. Eng.* **1995**, *73*, 171.

More New Polymer Products

Fluoropolymers

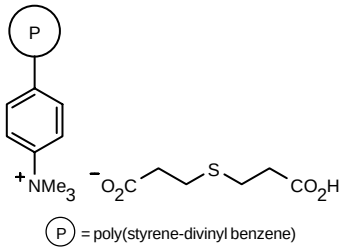
Aldrich now offers amorphous, high T_g fluoropolymers based on the perfluoro-2,2-dimethyl-1,3-dioxole monomer. These fluoropolymers offer high optical clarity, solubility in selected solvents, and the lowest dielectric constant of any known fluoropolymer.

Hung, M.-H. *Macromolecules* **1993**, *26*, 5829.

46,961-0 **Poly[4,5-difluoro-2,2-bis(trifluoromethyl)-1,3-dioxole-*co*-tetrafluoroethylene],** 65 mole % dioxole **1g**

46,962-9 **Poly[4,5-difluoro-2,2-bis(trifluoromethyl)-1,3-dioxole-*co*-tetrafluoroethylene],** 87 mole % dioxole **1g**

Ozonolysis Quench Reagent

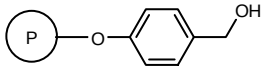


Aldrich offers this polymer-bound reagent for the reductive quenching of ozonolysis reactions, among other applications. It replaces volatile dimethyl sulfide and provides comparable yields of product. Simple filtration removes the sulfur-containing byproducts.

Appell, R.B. et al. *Synth. Commun.* **1995**, *25*, 3589.

45,901-1 **3,3'-Thiodipropionic acid, polymer-bound,** contains ~ 2.5meq S/g resin **10g; 50g**

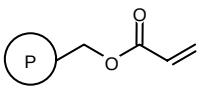
Resins for SPOS



The **Wang resin** (4-benzyloxybenzyl alcohol, polymer-bound) has become a very useful tool in SPOS and combinatorial chemistry due to its ability to support a diverse range of reactions. Recently, this resin has been employed in the preparation of pyridines and pyrido[2,3-*d*]pyrimidines via Knoevenagel and Hantzsch condensation reactions.[1] Dihydropyrimidines can be prepared via the multicomponent Biginelli condensation using a Wang resin-linked GABA urea.[2] The resin has also been successfully employed in palladium-mediated Heck reactions between aryl halides and olefins.[3] Additionally, the Wang resin has been utilized in the solid-phase synthesis of lavendustin A, a potent tyrosine kinase inhibitor, and in the combinatorial synthesis of sixty structurally related lavendustin A analogs.[4]

(1) Gordeev, M.F. et al. *Tetrahedron Lett.* **1996**, *37*, 4643. (2) Wipf, P.; Cunningham, A. *ibid.* **1995**, *36*, 7819. (3) Yu, K.-L. et al. *ibid.* **1994**, *35,* 8919. (4) Green, J. *J. Org. Chem.* **1995**, *60*, 4284.

44,292-5 **4-Benzyloxybenzyl alcohol, polymer-bound,** 0.6-1.0meq OH/g resin, 200-400 mesh **5g; 25g**



Use of the **REM resin** for resin-bound synthetic routes has been illustrated by preparing an array of tertiary amines using the Hofmann elimination reaction.

Morphy, J.R. et al. *Tetrahedron Lett.* **1996**, *37*, 3209.

47,173-9 **REM resin** **1g**

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