

About Purolite

Founded in 1981, Purolite is a leading manufacturer of ion exchange media, polymeric adsorbents, catalysts and advanced polymers. Headquartered in Bala Cynwyd, PA., the company has manufacturing facilities in the USA, China, Romania and the UK, and operates dedicated R&D centers in the USA, China, Romania, Russia and the UK. We have a network of over 40 offices in over 30 countries to provide customers with easy access to the largest technical sales and support network in the industry.

There are only a few companies that manufacture resins as part of their product portfolio. Purolite is the only company that focuses exclusively on advanced resin technology.

Quality and Consistency

As a specialty chemical manufacturer, quality is fundamental to the way we operate and perform. All Purolite plants and regional sales offices are ISO 9001:2008 accredited, and our Quality Management System criteria and procedures are widely recognized as being among the most stringent in the industry.

We have cGMP and FDA inspected facilities at our Romanian manufacturing site for the production of pharmaceutical grade resins.

Quality and consistency are the result of continuous dedication and attention to detail, sound manufacturing processes and strict control over raw materials, intermediates and final products. The quality of our products is independent of the production site as Purolite uses the same production processes and QC criteria in all manufacturing plants.

Industries, Products and Applications

Purolite resin technologies are used in just about every industry to solve countless application problems, and with more than 1,000 active commercial products, we have solutions for use in each and every one.

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|  Pharmaceutical |  Industrial & Domestic Softening |
|  Biotech |  Semiconductor |
|  Food & Beverage |  Potable & Ground Water |
|  Fossil & Nuclear Power |  Mining & Metals Finishing |
|  Chemical Processing |  Petrochemical & Refining |



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About Purolite Life Sciences

Started in 2012, Purolite Life Sciences supports R&D and production-scale applications in pharmaceuticals, food production, bioprocessing, fine chemical and other markets. The portfolio includes high-quality resins for enzyme immobilization, adsorption, extraction, and chromatography, and finished products for biocatalysis. Purolite resins and adsorbents are also used in drug formulations as active pharmaceutical ingredients (APIs) and excipients.

Purolite's team of world-class researchers and scientists develops novel, high-demand and customized products. Collaborations with other industry organizations and research institutes all over the world aim to produce the most sophisticated resin technology products available. Purolite has just completed a major refurbishment and expansion of its Llantrisant, South Wales, Life Sciences research laboratories and pilot plant.

Brands for Life Sciences

- Chromalite® polymeric resins for adsorption, ion-exchange, solid-phase extraction, and analytical and preparative chromatography
- Lifetech™ ECR resins for covalent, adsorptive or ionic enzyme immobilization
- Immobilized enzymes including CalB immo Plus™, transaminases and glycosidases
- *Praesto*™ agarose-based ion exchange, affinity and plain base resins for protein purification
- PuroSorb™ and Macronet™ synthetic adsorbents for industrial chromatography and purification

Applications

In addition to their use as APIs and excipients, Purolite resins and adsorbents for pharmaceutical and biopharmaceutical applications include drug carriers for increasing effectiveness of drug delivery, and products for demineralization, extraction and purification. Purolite APIs and excipients meet the demands of the American (USP), European (Ph. Eur.), British (BP) and Japanese (JP) pharmacopoeias, as required. Each is manufactured in our cGMP-certified facility, has a Drug Master File with the U.S. FDA, and meets FDA criteria.

Chromalite synthetic polymers are a comprehensive line of products characterized by mechanical robustness, chemical and pH stability, and compatibility with both polar and non-polar organic solvents used in chromatographic applications. Chromalite particle sizes range from 3 to > 200 microns.

The Lifetech portfolio of resins for enzyme immobilization (ECR) is used for biocatalysis in the pharmaceutical, food and chemical industry. ECR resins lead the market in range of available porosities, particle sizes, functional groups and chemistries. Immobilized enzymes on Lifetech resins expand the biocatalysis portfolio, offering robust, cost-effective and efficient ready-to-use biocatalysts.

Praesto agarose-based media for MAb processing, plasma fractionation and recombinant protein purification were launched in 2014. Purolite paired its extensive expertise in resin technology with the world's leading experts in agarose chemistry and applications to develop the *Praesto* portfolio. These products are currently available for R&D and clinical-scale purification. Production-scale (m3) quantities will be available in 2017.

PuroSorb and Macronet synthetic adsorbents are composed of water-insoluble, three-dimensional, cross-linked polystyrene/DVB or acrylic/DVB polymers. These resins feature large surface areas and are thus extremely efficient for adsorbing organic and inorganic compounds.

