



Products for glass strengthening

What is chemical glass strengthening?

Chemical glass strengthening uses chemical reactions to initiate ion exchange in the surface layers of the glass while encouraging tension in the inner glass. The combination of surface compression and tension strengthens the glass, making it more durable and less prone to breakage.

Unlike heat treatments, such as tempering and annealing, chemical strengthening can be used on very thin glass and will not warp the surface, which makes it an excellent option for optics, windows, and other applications where distortion from thicker glass can affect performance.



How chemical strengthening works?

Chemical treatments for glass strengthening typically include a molten salt bath of potassium nitrate. Potassium ions replace sodium ions on the glass surface. The slightly larger size of potassium ions compresses the particles in the surface, strengthening the surface on a microscopic layer and reducing the number of routes along which cracks can occur. The chemical composition of the bath can be modified and tailored to enhance certain properties based on the glass formulation or intended application.



For the best performance in the ionic exchange during the chemical glass strengthening treatment, it is crucial to use high-quality chemicals.

PanReac AppliChem branded chemicals for chemical glass strengthening are tested in our laboratories to provide a minimum of 99.0% purity in all batches and ICP controlled to ensure a maximum level of the most critical metals.

Product code	Product name	CAS number	Pack sizes
131524	Potassium Nitrate without anticaking (Reag. Ph. Eur.) for analysis, ISO	7757-79-1	1 kg, 5 kg, 25 kg
131702	Sodium Nitrate (Reag. USP, Ph. Eur.) for analysis, ACS, ISO	7631-00-4	1 kg, 5 kg, 25 kg



About us

ITW Reagents, with more than 80 years of experience, offers the highest quality and innovative products for analysis, research and production applications.

Our division has **two European manufacturing plants** in Barcelona (Spain) and Darmstadt (Germany). An Integrated Management System is fully implemented in all our company's operations, and it is based upon compliance with the following official standards:

- **ISO 9001:2015** for quality management
- **ISO 14001:2015** for environmental protection
- **ISO 45001:2018** for occupational health and safety management

At the **ITW Reagents** division, we are highly committed to protecting the environment and preserving surroundings. Consequently, we follow a strict environmental responsibility policy, and meet all legal requirements ensuring minimal impact from our activities on the environment.



IP-069EN

AppliChem GmbH
Ottoweg 4
D-64291 Darmstadt
Germany
Phone +49 6151 9357 0
Fax +49 6151 9357 11
info.de@itwreagents.com

ITW Reagents, S.R.L.
Corso Milano 31
I-20900 Monza (MB)
Italy
Phone +39 039 9530 360
Fax +39 039 9530 361
info.it@itwreagents.com

Panreac Química S.L.U.
C/ Garraf 2, Polígono Pla de la Bruguera
E-08211 Castellar del Vallès (Barcelona)
Spain
Phone +34 937 489 400
Fax +34 937 489 401
info.es@itwreagents.com

