

Cryo-Grind® System Cooling Conveyor ***The right conveyor makes a difference***



Choosing the right cooling conveyor for the job is critical to your cryogenics operation. The correct size and type of conveyor translates into a more efficient process. And a more efficient process saves you money. We can help make your choice easier. Air Products offers a selection of cooling conveyors backed by our expertise to maximize the performance of your cryogenic grinding system.

Cooling increases yields for lower operating costs

To grind efficiently, your feed material must be completely brittle prior to actual grinding. Using a cooling conveyor with liquid nitrogen (LIN) to achieve embrittlement results in consistently higher yields of particles in the target size range and, ultimately, reduced operating costs.

Cooling conveyors transfer the feed from the hopper to the grinding mill. LIN is sprayed on the material as it moves along the conveyor, resulting in a high heat transfer coefficient on the pellet surface. This rapid cooling makes the material brittle and more easily crushed by a variety of impact-type mills.

Our cooling conveyors are ideal for the cryogenic size reduction of:

- Rubber and plastics
- Spices and other food products
- Pharmaceuticals
- Waxes
- Hot melt adhesives
- Pigments and powder coating materials
- Thermoplastic elastomers

The choice is yours

Whether you're looking for a complete cryogenic fine grinding system or want to enhance your current mill's performance with the addition of a cooling conveyor, Air Products has the hardware and—more importantly—the expertise you need to get the results you want. We offer both rectangular foam-insulated and cylindrical vacuum-insulated configurations in various sizes to meet your operational and performance requirements.

Foam-insulated cooling conveyor for efficient, frequent product changes

Our foam-insulated cooling conveyor is ideal for applications that require frequent material changes. Its heat exchanger opens and closes easily for efficient cleaning, and the rectangular design provides a small installed footprint.

Additional features and benefits:

- E-Z hinge design features hassle-free screw removal for cleanup and material change
- Multiple locations for thermocouples increase installation flexibility
- Hinged front door allows rapid warm-up
- Adjustable spray bar allows different LIN flow rates
- Efficient operation optimizes LIN efficiency
- Available in 2-ft. (610 mm) and 7-ft. (2135 mm) lengths



Foam-insulated cooling conveyor

Vacuum-insulated cooling conveyor for lower operating costs

Our vacuum-insulated cylindrical conveyor is designed for maximum operating efficiency. The ability to spray from single or multiple injection nozzles increases flexibility for a wide range of materials and applications, and the conveyor’s shallow flight design ensures even material exposure to the cooling LIN for optimum heat exchange.

Additional features and benefits:

- Preplumbing for co-current or counter-current removal of cold heat-exchanged gas provides greater versatility to suit your application
- Variable flight design permits mixing of the feed solids
- Easy installation/removal of screw allows for fast changeover and easy cleaning

Vacuum-insulated cooling conveyor sizes available

<i>Model Type</i>	<i>Screw Diameter</i>	<i>Overall Diameter</i>	<i>Overall Length</i>	<i>Length Inlet to Outlet</i>	<i>Height Inlet-Outlet Flange</i>	<i>Approx. Weight</i>
E-100	4" (100 mm)	8.5" (219 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24" (600 mm)	600 lbs (270 kg)
E-150	6" (150 mm)	10" (256 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24" (600 mm)	660 lbs (300 kg)
E-300	12" (300 mm)	16" (406 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24" (600 mm)	882 lbs (400 kg)
E-300 XL	12" (300 mm)	16" (406 mm)	23 ft (7000 mm)	20 ft (6000 mm)	28" (700 mm)	1433 lbs (650 kg)

The Air Products advantage

When you rely on Air Products for a solution to your fine grinding requirements, you gain access to the years of expertise in operations, liquid nitrogen freezing and cooling that you would expect from the world leader in cryogenic grinding. Our professionals in Air Products’ cryogenic grinding test

facility in Allentown, Pennsylvania can help match the right system with your grinding specifications. We offer a complete, turnkey skid-mounted system that includes mills, cooling conveyors and liquid nitrogen equipment and supply. Individual components are also available.



Vacuum-insulated cooling conveyor

For More Information

This data sheet offers only a brief overview of Air Products' cooling conveyors. Please contact Air Products for more information, or visit our website at the URL below.

Americas

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Tel 800-654-4567
Fax 800-272-4449
E-mail info@apci.com

Asia

Air Products Asia, Inc.
Suite 6504-7 Central Plaza
18 Harbour Road
Wanchai
Hong Kong
Tel 852-25271922
Fax 852-25271927

Europe

Air Products PLC
Hersham Place
Molesey Road
Walton-on-Thames
Surrey KT12 4RZ
England
Tel 44-1932-249200
Fax 44-1932-249565

Air Products PLC
2 Millennium Gate, Westmere Drive
Crewe, Cheshire CW1 6AP
Tel 0800-389-0202
E-mail apbulkukinfo@airproducts.com

Air Products SAS
78 Rue Championnet
75881 Paris Cedex 18
Tél 0800-480-030
E-mail frinfo@airproducts.com

Air Products GmbH
Hauptverwaltung Hattingen
Hüttenstrasse 50, D-45527 Hattingen
Tel 02324-689-88888
E-mail apginfo@airproducts.com

Air Products N.V./S.A.
Chaussée de Wavre 1789
B-1160 Bruxelles
Tel 02-674-94-57
E-mail beinfo@airproducts.com

Air Products Nederland BV
Klaprozenweg 101
1033 NN Amsterdam
Tel 0-20-4353535
E-mail nlinfo@airproducts.com

AIR PRODUCTS spol. s r.o.
Ústeká 30
405 02 Děčín
Česká republika
Tel 800-100-700
E-mail infocz@airproducts.com

Air Products Slovakia, s.r.o.
Mlynské nivy 74
821 05 Bratislava
Slovenská republika
Tel 0800-100-700
E-mail infosk@airproducts.com

AIR PRODUCTS GAZY Sp. z o.o.
Ul. Gliwicka 31,
47-220 Kedzierzyn-Koźie
Polska
Tel 0-801-90-90-19
E-mail ciecze@airproducts.com

Carburos Metálicos, S.A.
C/ Aragón, 300
08009 Barcelona
Tel 902-494-495
E-mail info@carburos.com

tell me more
www.airproducts.com/cryogenics