

Air Products Express (APEX) Services

Fast, Flexible Industrial Nitrogen Services (INS) for Accelerated Reactor Cooldown

Air Products' APEX Industrial Nitrogen Services provide just what you need: fast and flexible supply of high-quality nitrogen for planned and unplanned reactor cooling and inert entry needs. Part of our full spectrum of services, APEX nitrogen supply can save time and money by safely minimizing the time required to cool your reactors for inert entry or catalyst dumping.



- **Quick commitment**—through our dedicated APEX hotline: 1-800-APEXGAS. You can call 24 hours a day, 7 days a week and get timely assessment of your needs and fast supply commitment for your job.
- **Rapid response**—with an extensive fleet of mobile pumping units nationwide, ready for quick deployment from strategic locations. So if the unexpected happens, you can expect our units to be at your facility fast.
- **Fast setup**—with no infrastructure or capital investment required. Whatever the job, our self-contained pumping units arrive ready to pull up, hook up, and start working anywhere and anytime.
- **Quick adjustment**—with on-site operating flexibility. Flow rate, temperature, and pressure can all be quickly and easily adjusted to suit your needs.

APEX—Broad industry experience

APEX Services has over 20 years' experience meeting the industrial reactor cooling needs of our customers. Whether with the one-pass, cold gas cooldown or using liquid nitrogen injection into a recirculating nitrogen loop, APEX has the experience to optimize your reactor cooldown procedures.

APEX—High-performance equipment

State-of-the-art mobile pumping units efficiently deliver nitrogen wherever, whenever, and however you need it with:

Flexible operation

- Flow rates to 500,000 scfh per pumper; multiple pumpers can be used
- Pressures from 0 to 10,000 psig
- Temperatures from -320°F to $+800^{\circ}\text{F}$

APEX—Fast and flexible benefits

- **Custom-engineering service**—geared specifically to your particular needs. When you use APEX services, we use our technical expertise and computer modeling to determine and deliver the most cost-effective nitrogen supply solution for your needs. Our nitrogen cooling model calculates the optimum nitrogen injection conditions for liquid injection or one-pass cold gas cooling. Our integral Microprocessor Controller using remote thermocouples monitors usage point temperatures and protects your unit against costly thermal damage.

Safe operation

- Integral high and low temperature alarms with timed delayed shutdown
- Automatic over-pressure shutdown
- Emergency engine shutdown
- Pressure relief valve protection
- Trained operators with Safety Council certification

Self-contained operation

- Diesel powered—no external utilities needed
- Diesel-fired vaporizer
- Compact size—versatile on-site placement
Pumper dimensions: 60' long x 12' high x 8' wide

APEX—Your dependable nitrogen source

You can depend on APEX Services for nitrogen supply because Air Products is a world leader in nitrogen production, with over 30 major merchant plants in the U.S. We also move gases swiftly to customers through the largest private U.S. industrial gas tanker fleet. All ensuring that when we commit to nitrogen supply, we deliver on our commitment.

To find out more . . .

For placing orders or for more information on Air Products' APEX Industrial Nitrogen Services, please contact:

1-800-APEXGAS (1-800-273-9427)

Air Products and Chemicals, Inc.

7201 Hamilton Boulevard

Allentown, PA 18195-1501

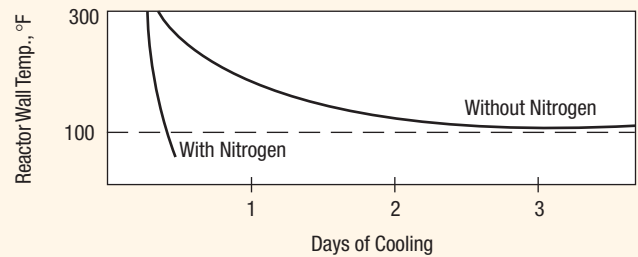
Attn: Gases and Equipment Group

APEX Desk

Phone: 1-800-273-9427

Fax: 1-610-706-6369

Internet: <http://www.airproducts.com>

Effect of Using Nitrogen on Cooling Time

Normal reactor cooldown can take three to four days. With Air Products' Nitrogen Services, the delay can be cut by one-half or more.