Melting Oxy-Boosting

We deliver:

- Pull increases up to 10%
- Furnace life time extension

The Industry Challenge

To heat glass furnaces, air is commonly used to provide oxygen for combustion. However, when a glass furnace ages, several challenges emerge, such as maintaining the pull rate, extending the furnace campaign, or even repairing air regenerators.

If greater capacity is needed, adding oxy-fuel burners in a glass furnace is the best way to boost the pull rate up to 10%.

For the most suitable solution to compensate furnace aging and maintain productivity, discover **Nexelia™ for Melting Oxy-Boosting**. Additionally, it helps increase glass production and address environmental concerns for your growing business.

The Nexelia Solution

Based on our groundbreaking technology, **Nexelia™ for Melting Oxy-Boosting** uses pure oxygen instead of air combustion, offering optimal glass-melting conditions by improving heat transfer.

You have three options to choose from:

- Air enrichment to continue using air burners while increasing the oxygen concentration in combustion air (typically up to 24%).
- Oxy-boosting, which directly funnels pure oxygen through one or several lances inserted in or close to the air burners.
- Additional oxy-fuel burners, which can be installed when a glass furnace needs a high or higher heat transfer, temporarily or continuously.

Nexelia™ for Melting Oxy-Boosting provides you the optimal expertise and experience.

Your Advantages

Energy savings

Reduce the volume of flue glass by up to five times compared to air combustion. Or choose to increase the pull rate by up to 10 percent while maintaining the same flue-gas volume for higher heat power. Additionally, **Nexelia™ for Melting Oxy-Boosting** reduces the carbon monoxide (CO) concentration in flue gas.

Performance

Until refurbishment is possible, you can increase the pull rate of your aging glass furnace to maintain its performance. **Nexelia™ for Melting Oxy-Boosting** typically extends furnace campaigns for up to three years.

Services

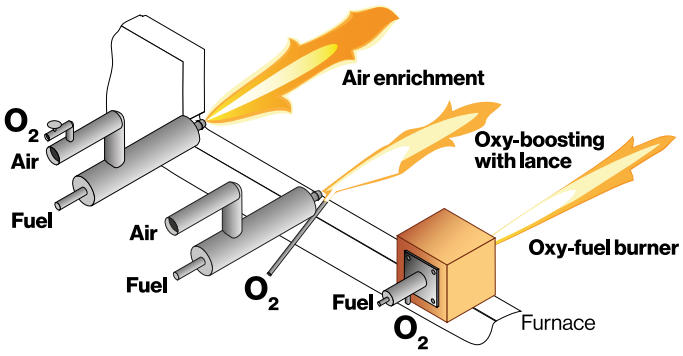
With **Nexelia™ for Melting Oxy-Boosting**, we equip you with oxygen supply and related equipment, including an oxygen tank, oxy burners and associated piping. We also provide start-up assistance and a flue gas analysis.

Core Features

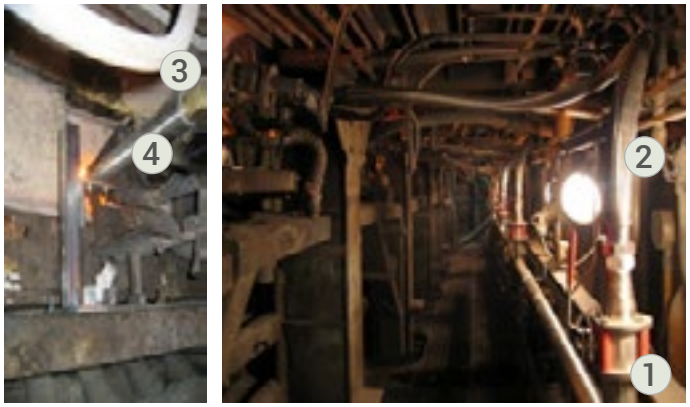
Nexelia™ for Melting Oxy-Boosting consists of:

• **Oxygen supply:**
Liquid cryogenic oxygen requires a bulk transportation mode that responds to short-term needs.

• **Patented glass-boosting technologies**



• Lances



1 Manuel ball valve at each point of use
2 Flexible with O_2 lance
3 Orifice with adapted orifice diameter to control and limit the flow
4 Non-water-cooled O_2 lance inserted in the port close to the fuel injector

Patented burners

- **GLASS MELTING BURNER** is a non-water-cooled oxy-fuel burner specially designed for continuous melting furnaces. And it's appropriate for most glass types.

- **GLASS MELTING BURNER-FC** leverages a patented design in which fuel and oxygen are mixed outside the burner block then introduced in the furnace through a unique configuration of injectors, producing a hugely luminous flame up to three times wider than conventional oxy-fuel burners.

- **GLASS MELTING BURNER-SUN** is based on the principle of significant fuel and oxygen injection separation. It allows you to adjust the flame length and the heat transfer to the furnace yield.

- **GLASS MELTING BURNER-VM** delivers variable momentum with adjustable flame length.

VALVE TRAINS is an automated control system to monitor the oxy-fuel burners and their supply systems.

These technologies are easily and reliably performed and installed by our expert teams, who provide you with full support at every step, from the auditing of your current melting process to the preliminary and detailed designs of your new solution, as well as its complete implementation, including commissioning, monitoring and maintenance.

Case Studies

CASE STUDY #1: Bottle

Regenerative, end-port furnace
400 tpd soda lime

• **Customer needs**:
Improve combustion efficiency because of:
- Pull limitation by furnace pressure
- Presence of CO in flue gas

• **Solution**:
- Oxygen boosting with oxy-fuel burner

• **Benefits**:
- 10% pull increase
- Same combustion air flow

CASE STUDY #2: Bottle

Regenerative, end-port furnace
360 tpd soda lime

• **Customer needs**:
Maintain production and quality facing regenerator difficulties because of degraded regenerator and loss of efficiency.

• **Solution**:
Partial loss of combustion air compensated by oxygen injection with two lances per side.

• **Benefits**:
Furnace campaign extended a full year.

Related Offers

• **Nexelia™ for Melting Oxy-Combustion**
• **Nexelia™ for Melting-Heat Oxy-Combustion**
• **Nexelia™ for Glass Finishing**

Contact Us

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Air Liquide

A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 60 countries with approximately 66,500 employees and serves more than 4 million customers and patients.