

DUST DISASTER

Incurable lung disease continues to ravage fabricators

Silica is everywhere. For most of us, it is harmless—a naturally occurring mineral found in sand, stone and other substances.

For industrial workers, though, this seemingly innocuous substance is lethal.

The most common form of silica is quartz, found in granite, concrete, and sandstone. Quartz has one of the highest silica counts, often comprised of up to 90% silica dust and resin.

Silica becomes toxic through various construction and manufacturing processes, including cutting, grinding, drilling, and crushing materials like stone, concrete, and brick.

The dust released during this work, respirable crystalline silica, is 100 times smaller than a grain of sand, making it undetectable and easy to inhale.

Once inside the body, the ultrafine particles reach deep into the lungs, causing irreparable damage, including:

- **silicosis**
- **progressive massive fibrosis**
- **lung cancer**
- **coal workers' pneumoconiosis** (also known as black lung disease)
- **and other debilitating, life-altering, incurable diseases**

SILICOSIS: INCURABLE YET ENTIRELY PREVENTABLE

In 2023, NBC spoke to Arthur Frank, professor of environmental and occupational health at Drexel University. “[Silicosis] is an absolutely horrible, preventable, work-abusive

situation that never should have occurred,” said Frank.

If history is any guide, relying on government regulations or workplace standards to catch up with this modern-day health crisis is insufficient.

In work environments where silica dust is prevalent, personal protective equipment (PPE) emerges as the singular, crucial element within worker’s control.

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THE POWER OF A PAPR SYSTEM

PAPR (powered air-purifying respirator) systems are one of the most effective defenses against silica dust.

Optrel offers two top-tier PAPR systems, the e3000x and Swiss Air, each with a TH3 HEPA filter for superior protection.

REWRITING HISTORY: SWISS-MADE SOLUTIONS FOR WORKER SAFETY

The recent spike in cases, especially among countertop fabricators in California, underscores the critical role of PPE in safeguarding worker health.

Optrel leads in worker safety with the highest quality Swiss-made respiratory protection.

The Swiss Air and e3000x PAPR systems offer the most advanced technology, giving employees and employers a powerful tool for combating silicosis while ensuring employee safety, productivity, and longevity.



THE OPTREL SWISS AIR PAPR: ULTIMATE PROTECTION AGAINST SILICA DUST

- Pair the Swiss Air PAPR with an optrel welding hood, a Clearmaxx grinding shield, or without any facial protection.
- Comfortable and lightweight, the ergonomic backpack-style design allows for freedom of motion, even in tight spaces.
- The chest-mounted control panel provides easy access to controls, including filter life, battery status, and airflow regulation.
- Automatic airflow calibration.
- No fit test is required, providing protection regardless of facial hair.
- Machine washable, flame retardant
- face mask.
- 14-hour high-performance battery uninterrupted work sessions.

THE E3000X PAPR SYSTEM



The e3000x is the market’s most powerful breathing protection system, filtering up to 240L air per minute and removing 99.8% of airborne contaminants when paired with an optrel PAPR welding helmet or Clearmaxx grinding shield.

With audible and visual low battery and filter alerts, you can rest assured that workers are safe and protected.

VISIT [OPTREL.US](https://www.optrel.us) FOR MORE INFO OR EMAIL [INFO_US@OPTREL.COM](mailto:info_us@optrel.com)

SILICA: CENTURIES OF SUFFERING

For hundreds of years, silica dust has silently crept into the lungs of unsuspecting workers, resulting in thousands of lives lost.

16th Century	Silicosis observed by German expert Georgius Agricola among miners.
1930s	“Hawks Nest Tunnel” industrial disaster in West Virginia. More than 750 workers died as a result of occupational exposure to silica dust.
2000	The U.S. government officially categorizes silica as a known human carcinogen, acknowledging its deadly impact on workers’ health.
2016-2018	Black lung disease surges among miners, with 400+ cases of advanced progressive massive fibrosis in Appalachia alone.
2019	Over 70 cases of silicosis reported in countertop fabricators in California. Ten men aged 30-40 died from the disease.
2023	The crisis continues worldwide, with California and Australia considering a ban on engineered stone.