

# ASPHALT PLANTS

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SILICA

# Silica

## What is Silica and Silicosis?

Silica, or silicon dioxide ( $\text{SiO}_2$ ), is a mineral that occurs naturally in crystalline or non-crystalline form. The most abundant crystalline form is  $\alpha$ -quartz, which is the most common silicate mineral in the earth's crust. It is found in sand, sandstone, shale and granite. Drilling, crushing, cutting, chipping, breaking, sawing or polishing materials containing crystalline silica can create a large amount of respirable dust.

Silicosis is a lung disease caused by the inhalation of crystalline silica dust. Leading to inflammation and scarring in the form of nodular lesions in the upper lobes of the lungs.

Approximately 2.3 million workers are exposed to respirable crystalline silica in the workplace. This includes 2 million workers in construction and roughly 300,000 workers in general industry, maritime and hydraulic fracturing. Such jobs include:

- Construction
- Sandblasting
- Jack hammering
- Rock drilling, cutting, chipping or polishing
- Brick or tile cutting and sawing
- Concrete drilling, sawing, grinding and polishing
- Tunneling
- Demolition
- Asphalt milling
- Tuckpointing
- Stone countertop fabrication
- Diatomaceous earth processing
- Pottery production
- Foundries
- Work on linings of rotary kilns and cupola furnaces
- Mining
- Hydraulic fracturing



# EXPOSURES

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# Using Appropriate PPE

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## Half Face / Cartridge



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[https://www.youtube.com/watch?v=R\\_sC2wX9Uwc&feature=youtu.be](https://www.youtube.com/watch?v=R_sC2wX9Uwc&feature=youtu.be)

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## Where are the greatest Hazards?

Though there are many moving parts on an Asphalt plant...they may not be the most DANGEROUS!





Respirable Dust

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Exposure /  
Concentration





# Tasks/ Exposure

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House  
Keeping





# Loaders

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Environmental  
Cabs



# Screendeck maintenance





# Dryer Drum Groundsperson





# Rap Systems

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Groundperson

Silica

Shingles

Compounds





# Waste Dust

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Cleanout  
Dust Truck





## Processed Fines

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Controlling Dust  
(Airborne)





# Dust Screw

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Water sprays





# BAGHOUSE

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Keep  
maintained





# Checking worn Bags

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# Monitor Tasks with Exposures

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IS TASK OVER ACTION LEVEL ?

ENGINEERING CONTROL #1

ADMINISTRATIVE CONTROL #2

PERSONAL PROTECTIVE EQUIPMENT #3