Fact Sheet

BHA® Neutralite® Conditioning Agent

Product Data:

Description:

BHA Neutralite powder is described as an Aluminum-Silica of light density. It is a white, inert, finely divided amorphous silica,is (an innocuous) powder. It is on the FDA GRAS (Generally Regarded As Safe) list. BHA Neutralite powder is fireproof, odorless and has excellent absorption qualities.

Chemical Composition and Physical Properties:

Silica	SiO
Aluminum Oxide	Al_20_3
Sodium Oxide	Na_2O
Potassium Oxide	K_20
Magnesium Oxide	MgO
Calcium Oxide	CaO
Iron Oxide	Fe_20_3
Moisture @ 105°C	> .01%
Flash Point	None (product will not burn)
pH	7.0
Bulk Density	10 lbs. per cu. ft.
Fusion Point	2300° F
Absorption:	
Water	300+ % by weight
Oil	250+ % by weight

Use:

BHA Neutralite powder establishes an initial control layer on baghouse fabric bag surfaces. Simply add a calculated amount to the baghouse inlet duct air stream. A continuous addition or "conditioning feed" may be used where high concentrations of contaminates are encountered. The conditioning feed provides continuous porosity control and greatly extends on-line time between the cleaning cycles.

Packaging:

- 18 bag pallets of 4 cu. ft., multi-wall paper bags @ 40 lbs. ea.
- 500 lb. Supersacks
- Bulk truck loads of 12,000 - 18,000 pounds

Benefits:

- Increases bag life by reducing fabric blinding
- Absorbs hydrocarbons, preventing damage to bags
- Increased filtration efficiency
- Inhibits damaging sparks
- Provides a porous diffusion layer uniformly distributed over the filter bags, allowing maximum throughput
- No detectable free silica content

Economy:

The light density of BHA Neutralite powder results in far greater cloth coverage per pound when compared to lime or fly ash.

Safety in Handling:

See Material Safety Data Sheet

Successful applications of BHA Neutralite powder include:

Asphalt
Drum Plants
Batch Plants
Asphalt Dryer

Cement
Cement Kiln vs. Cement Plant

Rock Dust
Lightweight Aggregate Kiln

Foundry
Foundry/Steel-Railroad
Foundry/Grinding
Foundry/Machine Shop
Shot Blast/Furnace Baghouse
Furnace, Grinders

Rubber
Lead Extruder Pots

Secondary Smelting
Aluminum Smelting

Steel
Arc Furnace

Machine Shop
Grinding Wheels
Machine Shop/Incinerator

Galvanizing

Chemical
Chemical - Paints & Pigments
Chemical - Agriculture
Chemical - Petroleum, Refining, Coal Products

Industrial Boilers
Industrial Boiler
Coal-Fired Boiler
Hog-Fired Boiler

Utility Boilers
Coal-Fired Boiler

Waste to Energy
Medical Waste
Soil Remediation
Metal

Independent Power Plants

PARKBHA319 2018/01/02

Parker Hannifin Corporation
Industrial Gas Filtration and Generation Division
11501 Outlook Street, Suite 100
Overland Park, KS 66211 USA
phone 800.821.2222
fax 816.353.1873
www.BHA.com

ENGINEERING YOUR SUCCESS.

Fact Sheet

BHA® Neutralite® Conditioning Agent

In order for fabric filter bags to be an efficient part of a dust collection system, they require a residual dustcake on their surface. A dustcake is the initial layer of particles that forms on the bag surface when the fan is turned on and a process is vented through the baghouse. The dustcake is the actual filter in a dust collection process, not the fabric of the filter.

Problems can start on the filter surface

Filters that are new or recently cleaned allow greater airflow than ones covered in dust during collection process. Particulate collected from an industrial application will coat clean filter surfaces rapidly, carried along by the airflow passing through the fabric. But particles coming straight from the process can create collection problems:

- Some processes produce a high percentage of particles too small to be collected by the fabric alone, and they can bleed through small air passages, resulting in emissions.
- Some processes have moisture or hydrocarbons in the gas stream; these can cause the particles to form a coating on the fabric surface that reduces or even completely blocks airflow.
- New filter bag fabric is porous, causing air to pass through at a higher velocity than through fabric with a coating of dust. Particulates carried at a higher velocity can become embedded in new fabric, causing a blockage where they stop. When enough blockage has formed that proper airflow through the fabric is restricted, the filter is said to be "blinded."

These collector problems may result in short filter bag life, higher differential pressure, increased maintenance and parts costs, and possibly even lost production as collectors require service.

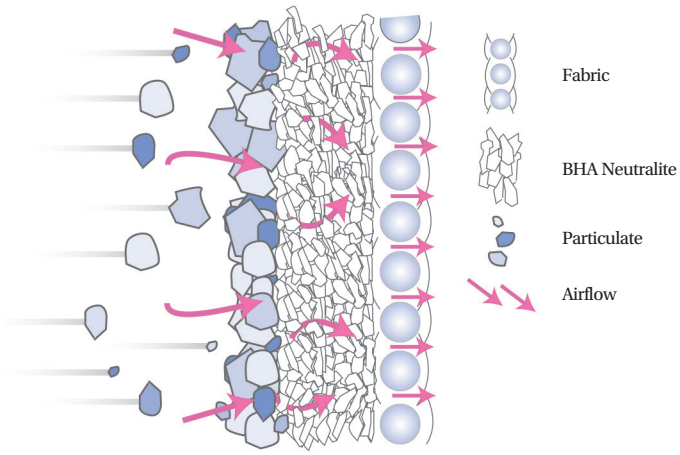
The solution comes from Parker Hannifin

The solution is to have an effective dustcake that filters the particulate, helps maintain proper airflows through the collector, and helps protect the fabric from damage. That solution is best achieved by using BHA Neutralite Conditioning Agent to coat the filters before collecting process particulate.

BHA Neutralite Conditioning Agent is a white, chemically inert powder composed of millions of particles of varied sizes. When used as a base coat on filters, BHA Neutralite creates a three dimensional, porous dustcake on the bag surface. This controlled dustcake diffuses the air stream as it filters the fine particulate, meanwhile protecting the surface of the bags from impingement (particle embedding in the fabric), agglomeration (non-porous coatings of particulate mixed with moisture or hydrocarbons), bag blinding (particle blockage of the primary airflow passages in the fabric).

Benefits of Neutralite Powder:

- Absorbs damaging hydrocarbons and moisture
- Prevents fine particulate impingement in fabric
- Inhibits sparks carried over from combustion processes
- Promotes even airflows for lower differential pressure
- Stays on bags even at low fan velocities and during cleaning
- No detectable "crystalline" or free silica content



BHA Neutralite works by providing a protective coating on the fabric surface. This controlled dustcake diffuses airflow through the millions of passages between particles, resulting in reduced differential pressure. The coating also helps prevent particle impingement, fabric airflow blockage, and contamination by hydrocarbons and moisture.

PARKBHA319 2018/01/02

Parker Hannifin Corporation
Industrial Gas Filtration and Generation Division
11501 Outlook Street, Suite 100
Overland Park, KS 66211 USA
phone 800.821.2222
fax 816.353.1873
www.BHA.com

ENGINEERING YOUR SUCCESS.

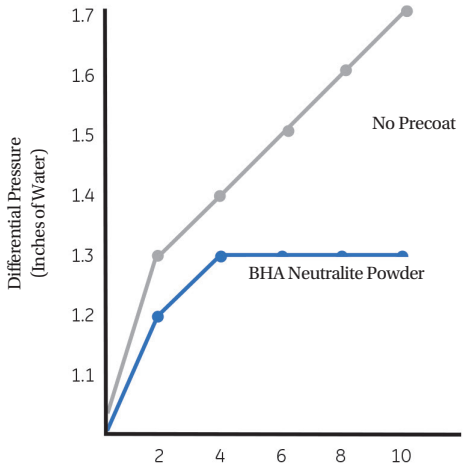
Fact Sheet

BHA® Neutralite® Conditioning Agent

Proven to reduce differential pressure

Testing performed by the Southern Research Institute for the U.S. Department of Energy, and the U.S. Bureau of Mines proved Neutralite is an effective conditioning precoat that can reduce differential pressure while providing high filtration efficiencies. The independent testing showed that BHA Neutralite was able to increase collection efficiency dramatically while operating at a differential pressure 3-4 times less than without an initial dustcake of Neutralite powder.

Differential Pressure vs. Time



Helps solve existing bag problems

It's not uncommon for baghouses to experience issues during production. Using BHA Neutralite Conditioning Agent as a precoat can help avoid many problems that plague operations, but it can also help problems already in progress.

Spot-changing (mixing new and old bags)

When damaged bags in a collector are replaced one-by-one with new filters that are intermixed with older ones, the new bags can have up to three times higher flow rate than older ones be cause the new fabric has no obstructions and less resistance. The increased airflow through the newer fabric raises the velocity of the particulate striking the fabric. Left unprotected, the fabric interstices (the intersections of woven yarns) can become plugged by particulate not caught in the loft of the fabric. As more air passages become blocked off, the pressure resistance at the remaining openings increase, and differential pressure rises rapidly, even though the bags have been recently replaced.

Damaged bags

Dust collector operators have reported that using BHA Neutralite to form a dense, porous dustcake on bags already blinded with particulate and damaged by agglomeration has allowed production to continue without emissions or high differential pressure. A coating of BHA Neutralite powder helps by spreading the restricted airflow across a wider area on the surface of blinded bags to provide a more even collection surface, resulting in lower differential pressures.

BHA Neutralite provides a coating honeycombed with air passages above the fabric that helps filter particulate even over areas of blocked fabric. The varied shape of the BHA Neutralite particles in this filtering dustcake prevents tight compaction — air passages constantly exist, keep ing pressure drop down and maximizing airflow for production.

Baghouse puffing

When a collector cleans, the dustcake falls off the bag surface to the hopper, leaving the fabric exposed. When the collector or compartment returns online, the initial airflow is greater from reduced resistance, and fine particulate can be sucked through the fabric, resulting in momentary visible emissions at the stack, known as "puffing." BHA Neutralite powder is lightweight, and a control layer will even stay on the bag surface during normal cleaning. Other substances used to precoat filters are typically much heavier than BHA Neutralite powder and will fall off the bag surface with cleaning or if not under pressure from the fan.

Moisture and hydrocarbon-laden gas streams

Many processes have either moisture or hydrocarbon carryover to the baghouse due to a combustion process. This can create problems with dust agglomeration coating the bag, and moisture can also promote rust damage on collector components. The moisture can also react with chemicals in the gas stream to form acids that attack fabric and steel components of the collection system. BHA Neutralite powder absorbs three times its own weight of moisture and hydrocarbons, then falls off the bag during the cleaning cycle.

PARKBHA319 2018/01/02

Parker Hannifin Corporation
Industrial Gas Filtration and Generation Division
11501 Outlook Street, Suite 100
Overland Park, KS 66211 USA
phone 800.821.2222
fax 816.353.1873
www.BHA.com

ENGINEERING YOUR SUCCESS.

Fact Sheet

BHA® Neutralite® Conditioning Agent

BHA Neutralite SR reduces risk of baghouse fires

If your operation has the potential of hot sparks in the gas stream entering the baghouse, then BHA Neutralite SR (Spark Retardant) powder can help protect your collector. in addition to providing all the benefits as regular Neutralite powder, a properly maintained layer of BHA Neutralite SR powder provides a protective barrier between the fabric and sparks in the gas stream, and can help extinguish a spark before it damages the bag.

While original BHA Neutralite does not burn, sparks that enter the collector may continue to burn while in contact with the precoat. During field testing, BHA Neutralite SR prevented sparks from igniting filter fabric by extinguishing the spark when it came into contact with the powder.

What about substitute precoatings?

Over the years, operators have tried to find other alternatives that can provide the benefits of BHA Neutralite powder. The most commonly used ones are listed below.

Lime (Calcium Oxide)

Lime is derived by burning limestone and is alkaline by nature. Lime is hygroscopic—it easily reacts with water to form hydroxides, a common occurrence in baghouses. If sulfur is present in the gas stream, calcium sulfate (also known as gypsum) forms and will absorb any remaining moisture in the gas stream. This causes particulate agglomeration that plugs or blinds the bags, raising the differential pressure in the baghouse. Lime also consists of particles that are similar in size and shape which can create a dense, compact dustcake causing higher differential pressure and reduced airflow throughout the system.

Fly Ash

Fly ash is a generic term that applies to a wide variety of metallic oxide ash. It is generally abrasive, with a pH that can vary from highly acidic to very basic. Fly ash is primarily generated from burning coal, but can be produced from metal processors utilizing coke. In some cases, fly ash requires special pretreatment to alter its hazardous material make-up. Physical properties vary depending on the process generating the ash. It is extremely heavy and inefficient to serve as an initial dustcake because the material often falls off the bags even with the fan running.

Diatomaceous Earth

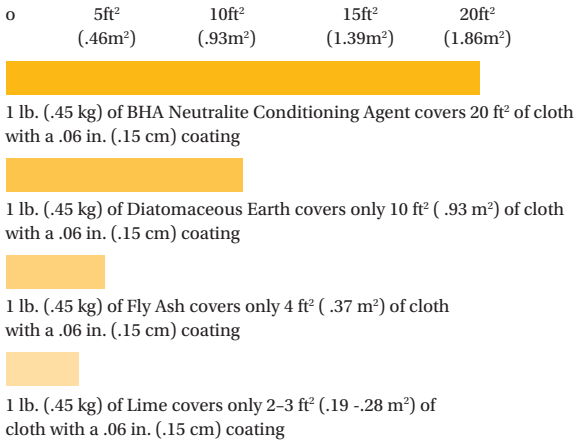
Diatomaceous earth is a natural material made up of fossilized plant life, resembling light colored common dirt. Diatomaceous earth is ordinarily manufactured in grades for liquid fil tration where it is a widely ac cept ed filter aid. Moisture present in the gas stream at startup can bind diatomaceous earth to the fabric surface, causing permanent blinding and reduced airflows.

When used for dry filtration, diatomaceous earth is usually calcined to remove organic material. This process can increase the level of harmful crystalline silica or “free silica.”

Weight vs. Volume

When the cost of substitute precoatings are analyzed at their price per pound/kilogram compared to BHA Neutralite powder, they may seem like an attractive alternative. However, the value of a filter precoat is derived from the amount of coverage it provides per unit, not simply how much it costs per pound. The chart below easily shows how BHA Neutralite powder provides its benefits with more bag area coverage than any of these commonly substituted materials, and with none of their limitations.

Greater cloth area coverage per pound



The chart above shows the amounts of precoats needed for a 1/16 inch thick coating on filter bags. When compared by weight with other precoats, BHA Neutralite Conditioning Agent may appear to be more expensive. When evaluated by volume and amount of coverage provided, BHA Neutralite Conditioning Agent is comparable in price, and provides performance unavailable by commonly used precoating treatments.

PARKBHA319 2018/01/02

Parker Hannifin Corporation
Industrial Gas Filtration and Generation Division
11501 Outlook Street, Suite 100
Overland Park, KS 66211 USA
phone 800.821.2222
fax 816.353.1873
www.BHA.com

ENGINEERING YOUR SUCCESS.