



LAMBENT
NANO-CHEMICALS

As Never Before...

LAMBENT NANO-CHEMICALS

www.lambentnanochemicals.com

LAMBENT NANO-CHEMICALS

Established in 2014, our manufacturing facilities are located at Morbi, Gujarat, ceramic hub of India. We have a high-tech enterprise specializing in intensive research & development, precision manufacturing, and strategic sales of high-purity colloidal silica solution and innovative tiles polishing liquids.



ABOUT US

5+ years professional colloidal silica production factory

Our main products include colloidal silica solution, tiles polishing Nano-A, High gloss Nano-A, Nano-C antifouling liquids, sodium silicate liquid, sodium silicate glass, sodium silicate powder, Orthosilicic acid. Since inception, our technical team are striving to fulfill the basic requirement of our clients. Our annual production come to more than 6000 tons". Main market includes china, usa, canada, indonesia, thailand, vietnam, south korea as well as some europien countries. Since its establishment, the company has kept close contact with central glass & ceramic research institute, central salt & marine chemicals research institute and other scientific research institutes to continually optimize products and provide personalized customization based on the differences of customer's needs. We have our own manufacturing facilities with professional workers, strict inspection department, and effective services team. Our professional team are dedicated to improve our services and qualities. We can produce customized products for our clients.

TILES POLISHING NANOCHEMICALS

In the ceramic tile industry, nano materials have helped to make the raw materials used in this industry. The three main purposes of applying nano materials in these products are to water proof tile surfaces, stain them, and increase gloss and surface transparency.

Nano Chemicals

Nano chemicals for vitrified tiles fill the micro cracks or tiny pores on the tile surface and form a dense protective layer. The nano polished tiles have shiny effects and are easy to clean. The nano chemicals for tiles are available in water-based chemicals as well as in oil-based chemicals. Oil-based chemicals are more expensive than water-based chemicals. Nano chemicals are silica-based gel chemicals. This chemical had an expiry between 3 to 6 months, depending upon the types of chemicals. The nano polished tiles are called stain-free tiles. It prevents scratches in tiles. The ordinary tiles without nano-coating have glossy of 65 to 75 percent. After the process of nano-coating, the shiny is more than 90. The nano antifouling liquid is dropped on the surface of the tile. There are various nano chemicals for vitrified tiles used for making vitrified tiles surface smoother. It is used in the ceramic tiles industry for the polishing of Vitrified tiles.

Types of Nano Chemicals

These chemicals are used in vitrified tiles such as double charge, nano tiles, and PGVT tiles. It is also used for matt, lappato, and marble tiles.

1. **A – chemical** – it is used for brightness on a tile surface. Have a glossy mirror finish over tiles—water base and colourless. Improve the glossiness of polishing tiles. The price of chemicals is Rs 40 per litre. Black nano chemical is also used for High Glossy vitrified tiles.

2. **C – Chemical** – it is used for stain prevention. This chemical helps to make the tiles stain-free. This chemical fills the tiny holes over the top surface of tiles. It strengthens the colours of tiles and improves the appearance. Based on solvent, there are two types of nano chemicals for vitrified tiles as Oil-based and water-based nano chemicals. It is a Water-based, environmental opaque liquid. It helps in coating tiles. It is coated after A-chemical. These chemicals are used only in nano-coating machines.

The nano chemicals are stored in plastic barrels – 220 and 250 kg.

Uses for nano chemical

During the process of polishing tiles, tiny pores are created over the surface of tiles. Nano chemicals are used to remove the pores. The purpose of nano chemicals is to clean tile surfaces easily and maintain the original appearance. The nano chemical does not affect the tile surface colour. It increases shininess in the tiles and makes anti-slip.

Composition

Various formulas are depending upon the tiles required for making nano chemicals. The pH value of nano chemicals for tiles is between 8-11. There are different granule sizes for silica dioxide granules, such as 5-80 nm and 10-15 nm.

Silicon dioxide colloid percentage – 30-80 %,

Antifreeze type solvent - 0.1-2%,

Organo silane agent - 0.1-1.5%,

Tension-active agent - 0.1-2%,

Alkaline corrosion agent - 0.6-0.9%, Remaining is water.

Physical properties

Following are the basic properties for Nano-A

Sr.No	Components	Contents	Results
1	Colour	Light Bluish liquid	Compile
2	Odour	Odourless	Compile
3	Specific gravity (gm/cm ³)	1.08	1.08
4	Ph	8.5 – 9.5	8.9
5	Viscosity (B4 Cup, Sec.)	10-12 Sec.	11 sec
6	Residue after evaporation	12%(min)	12.5%
9	Stability	9 months	Compile

Following are the basic properties for Nano-C (type-1)

Sr.No	Components	Contents	Results
1	Colour	Milky white liquid	Compile
2	Odour	Pungent	Compile
3	Specific gravity (gm/cm ³)	1.0 – 1.05	1.01
4	Ph	2.0 – 4.0	4.0
5	Viscosity (B4 Cup, Sec.)	12-15 Sec.	15 sec
6	Stability	9 months	Compile

Following are the basic properties for Nano-C (type-2), it is petroleum based chemicals.

Sr.No	Components	Contents	Results
1	Colour	Transparent	Compile
2	Odour	Pungent	Compile
3	Specific gravity (gm/cm ³)	0.65-0.75	0.70
4	Ph	6.0 – 7.0	6.5
5	Viscosity (B4 Cup, Sec.)	10-15 Sec.	10 sec
6	Stability	12 months	Compile

Following are the basic properties for Nano-C (type-3), it is oil based chemicals.

Sr.No	Components	Contents	Results
1	Colour	Transparent	Compile
2	Odour	Pungent	Compile
3	Specific gravity (gm/cm ³)	0.70 – 0.75	0.72
4	Ph	6.0 – 7.0	7.0
5	Viscosity (B4 Cup, Sec.)	15-20 Sec.	17 Sec
6	Stability	12 months	Compile

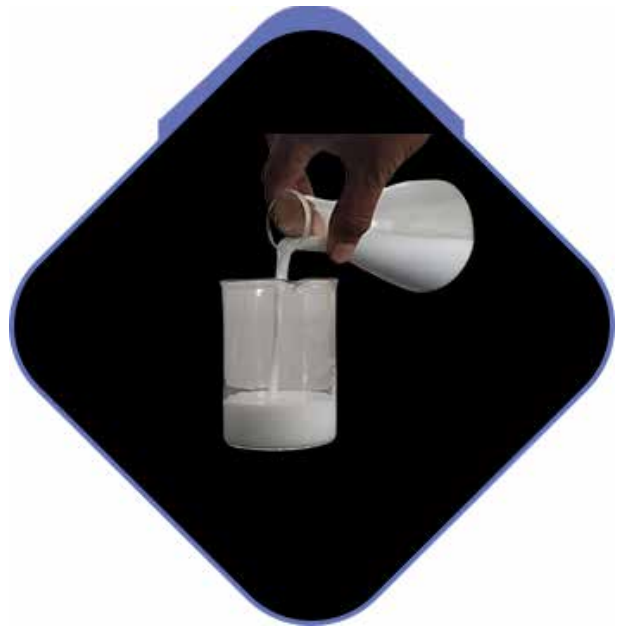
Advantages

There are many benefits of nano-coating in vitrified tiles, such as a smooth and shiny finish, resistance to dust and dirt. The nano-coating helps the tiles to clean quickly and last longer. The tiles are central aspects in your home flooring; it has to be taken proper care. As the floor surface may get spoiled by food items, tea, and other liquid items to clean tiles, nano coating can be helpful. Nano coating is also used in sanitary wares, washbasins, and bath wares. Various tiles can be processed under Nanomachines to apply nano-coating, such as

- Soluble salt vitrified tiles
- Double Charge Vitrified Tiles
- Polished Glazed Vitrified Tiles – PGVT



Tile polishing Nano-A



Tile polishing Nano-C (type-1)



Tile polishing Nano-C (type-2)



Tile polishing Nano-C (type-3)

Nanomachines for tiles

There are various nanomachine manufacturing companies such as BMR, Nade polishing machine, Keda polishing machine. After the tiles exit from the kiln, it is left for cooling for 12 – 24 hours. After that, it is passed through polishing machines, and then it is gone through Nanomachines for coating. During the treatment of tiles in polishing machines, tiny pores are created on the surface of tiles.

To remove these pores, nano chemicals for vitrified tiles are used in the devices. The nanomachine generally has 10 to 12 heads in single machinery, which rotates at high speed. There are two machines, one after one, for coating the surface of tiles. First Nano A chemical is dropped on the surface of the tiles. After that, the machine heads rotate at high speed and spread the chemicals over the surface of the tiles. After that, the Nano C chemical is dropped with the help of another smaller machine with punch or nano pads. The tiles become hot during this treatment process. The tiles pass-through this head, and tiny drops of nano chemical are poured over the surface of the tiles. There is also another machine that cleans and makes even disturbing chemicals over the surface of tiles. After that, the tiles are inspected and packed in the boxes according to grades.

Testing of nano-coating in tiles

The nano chemicals for vitrified tiles are checked in various ways. It can be matched with a permanent marker. If you mark or draw over the nano vitrified tiles with features and remove the stains by water, the tiles are genuine nano polished tiles.

Marker test of tiles after treatment



As shown in the first image, a blue or black marker is used for making marks over the surface of tiles and left for some time. After that, it is cleaned with clothes, and if there are no marker marks or stains left, this tile is passed for quality control. The other tests like the Surface flatness test, Quality test are done in the sorting cabin before packing into the box. After that, the tiles are sorted based on premium, standard and commercial grade. Various BIS standards for nano-coated tiles should pass from various stain chemicals tests such as 0.5% Methyl Blue Solution, 3% Hydrogen Peroxide and Iodine with ethanol.



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Contact Us

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