CHEMIFS CHEMICAL PVT LTD

Inspiring Tomorrow's Solutions Today

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ABOUT US

CHEMIFS CHEMICAL PVT LTD is and experience in the manufacturer of Poly Aluminium chloride. The company commenced business in 2020 and since then engaged in the servicing of the poly Aluminium chloride to industries for the purpose of rendering services. Our company strives hard to meet its client demand and strives for important through valuable feedback brought forward by self and existing customers.

OUR OBJECTIVES

CHEMIFS CHEMICAL PVT LTD provide you modern technique to coagulant to transform raw water into clean and safe water for industrial uses and human consumption, waste water treatment in paper industries for paper sizing process and also used in textile units to water treatment and effluent treatment plants of private sector companies though the length and breadth of country.

OUR VALUES

- Strives to achieve customer delight and satisfaction of our products.
- Committed to improve performance and delivery of our products.
- Provide the best quality according of the BIS (Beauro of Indian standard) specification.

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OUR PRODUCTS

POLY ALUMINIUM CHLORIDE

Chemifs Chemical provide you modern technic to coagulant to transform raw water into clean and safe water for industrial usage and human consumption, waste-water treatment and in Paper Industry for Sizing process.

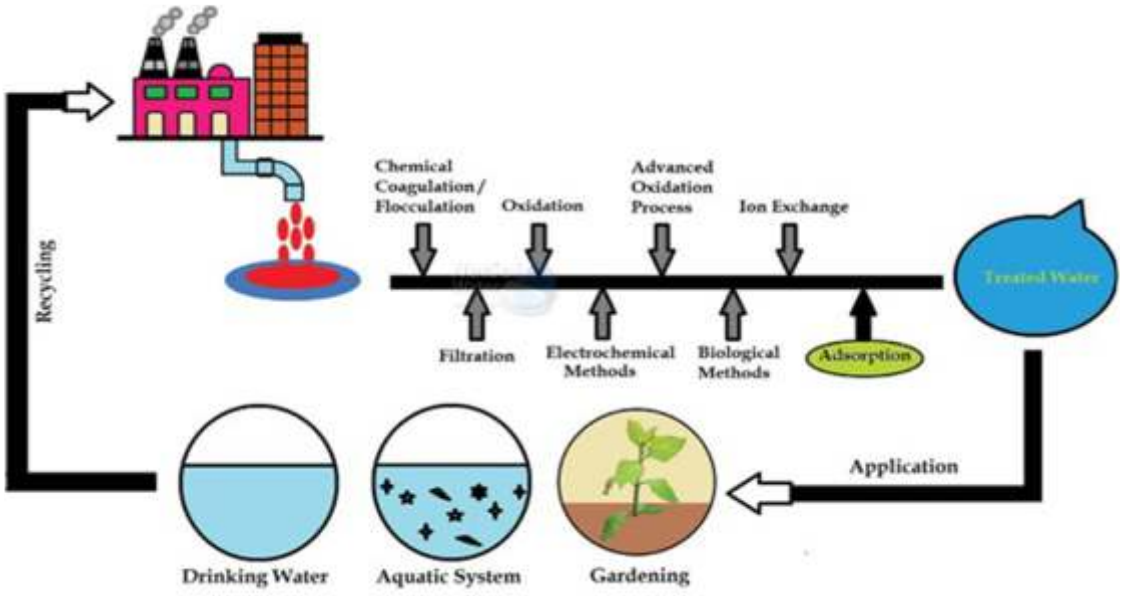
PAC product are used in water treatment for removal of suspended solid and other contaminants such as natural organic matter from surface water, microorganisms and colloidal particles. Silt and clay are stabilized by surface electrostatic charges, preventing the particles from coalescing. It is advantageous in water of low to moderate turbidity, possibly because of the greater charge neutralizing capacity relative to alum, ferric sulphate ferrous sulphate, etc.

STRUCTURE AND FORMULA OF POLY ALUMINIUM CHLORIDE

These compound have general formula Aln(OH)mCl(3n-m)x and have polymeric structure, totally soluble in water. The length of the polymerised chain, molecular weight and number of ionic charges is determined by the degree of polymerisation. On hydrolysis, various mono and polymeric species are formed, with Al1304(OH)247+ being a particularly important cation. The general formula of Polyaluminium chloride and Polyalminium hydroxide sulphate were a+b=3 a>1.05, n=15 were a>1.05, n=15 1. [Al(OH)aClb]n -OHT OH IT 2. [Al(OH)aClb(SO4)c]n An important property of polyaluminium coagulants is their basicity. The highly charged Al in the products is optimized for best performance for the different basicity's of PAC. The low to medium basicity products (25% up to 45%) are excellent at reducing the turbidity while good phosphor removal properties. High basicity PACI products (45% up to 70%) have been optimized for particle removal by controlling the formation of Al species in the coagulant.

APPLICATION WASTE WATER TREATMENT

PAC are used as any existing water Treatment plant. It is less alkali addition, and has greater flock formation, leading to more rapid settling and longer filter runs. The feeding rate of doses should be changed accordingly to the quality of raw water and it is necessary to determine an optimum feeding rate beforehand by means of Jar test. strial The ability to function at lower dosages, leading to lower sludge volumes. The metal content is negligible. Very low residual aluminium concentration in treated water. Consumption of PAC quantity is very low as compare to alum, so it reduce the costing. id water, It can be used in municipal & Industrial potable water treatments, industrial waste water treatments, sewage water treatments. urface



Treatment Waste Water by Adsorption

SIZING AGENT IN PAPER MAKING

Paper Industries uses PAC as a rosin sizing control in Neutral and alkaline paper production affects the Drainage of liquor from the paper. It provide many advantages for paper and pulp manufactures as it provides good result as dosages level is low compare to alum. It provides many benefits like

- Improves paper quality. Improves filler and fines retention. - Improves machine and drainage speed.
- Reduces the discharged load to the wastewater treatment plant. OF
- Polymers for retention and for save all operations
- Reduction in the use of other wet end additives such as size chemical, retention polymers and starch. Reduces the discharge load to the wastewater treatment plant. but Less colour reversion in paper sheet. the Sulphate free environment.
- Reduces brittleness of paper sheets

STRUCTURE AND FORMULA OF POLYALUMINIUM CHLORIDE

POTABLE WATER GRADE liquid grade

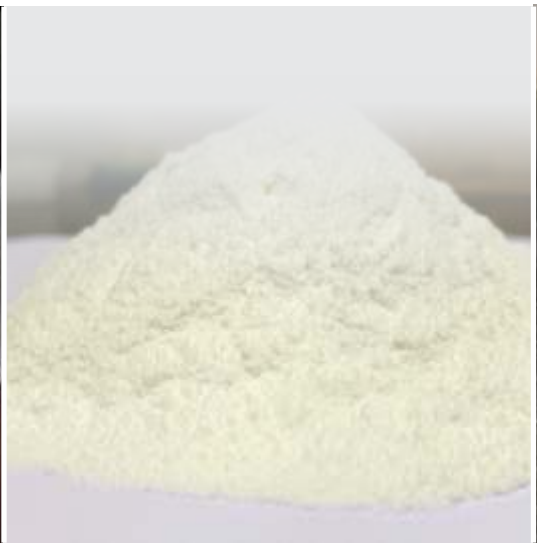
PARTIULAR	CHEM-PAC 10		CHEM-PAC 12	CHEM-PAC 14	CHEM-PAC 18	CHEM-PAC 30	
	MB	HB				MB	HB
Appearance	Clear Pale Yellow Liquid					Pale-Yellow Powder	
Alumina as Al_2O_3 % (w/w)	10.0 +/- 0.5	10.5 +/- 0.3	12.5 +/- 0.5	13.5 +/- 0.5	17.0 +/- 0.5	28.5 +/- 0.5	28.5 +/- 0.5
Basicity (% by Mass)	40.0 +/- 5.0	64 (Min)	35.0 +/- 5.0	35.0 +/- 5.0	40.0 +/- 5.0	40.0 +/- 5.0	64 (Min)
Chloride as Cl	12.5 +/- 0.5	10.5 +/- 0.5	13.0 +/- 0.5	20.0 +/- 0.5	20.0 +/- 0.5	37.5 +/- 0.5	31.0 +/- 1.0
Sulphate as SO4, Max (% by Mass)	2.7	2.5	2.5	Nill	Nill	10	10
Specific Gravity at 25 C	1.18-1.30	1.18-1.30	1.30 +/- 0.02	1.32 +/- 0.02	1.37 +/- 0.02	NA	NA
Bulk Density (gm/ml)	NA	NA	NA	NA	NA	0.65 (Min.)	0.65 (Min.)
Insoluble, Max (% by Mass)	0.5	0.5	-	-	-	1.5	1.5
pH of 5% aqueous Solution (w/v)	1.8-4.5	2.5-4.5	1.8-4.5	1.8-4.5	1.8-4.5	2.5-4.5	2.5-4.5

PAPER GRADE FOR SEIZING & ETP

PARTIULAR	NU-SIZE	ACISIZE	ET-PAC
Alumina as Al_2O_3 % (w/w)	11.5 +/- 0.1	12.1 +/- 0.1	13.5 +/- 0.2
Chloride as Cl	23.0 +/- 0.5	22.5 +/- 0.5	22.0 +/- 0.5
Specific Gravity at 25 C	1.30 - 1.32	1.30-1.33	1.31-1.35
pH of 5% aqueous Solution (w/v)	2.8-4.0	2.8-4.0	3.0-4.0

COMPARATIVE ANALYSIS OF WATER TREATED WITH PAC & ALUM

PARTIULAR	RAW WATER	WATER TREATED WITH ATUM	WATER TREATED WITH PAC		
			CHEM-PAC 30	CHEM-PAC 10	CHEM-PAC 12
pH	8	6.5	7.5	7.5	7.8
Alkalinity ppm	88	40	76	76	82
Total Hardness ppm	60	70	64	64	60
Total Chloride (Cl) ppm	29	29	36	36	33
Sulphate (SO4) ppm	8	55	9	9	9
Turbidity NTU	720	20	15	15	12
Dose of Alum/PAC mg/L	0	120	24	24	47



1. AMMONIUM SULPHATE

Ammonian sulphate (NH4)2SO4 ins Salt with a an norganic number of commercial uses. The most common use is as a soil fertilize(It contains 21% nitrogen and 24% Sulphur), food activities treatment of drinking water, etc.

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2. SODIUM SULPHATE

Sodium sulfate (also known as sodium sulphate or sulfate of soda) is the inorganic compound with formula Na2SO4 as well as several related hydrates. All forms are white solids that are highly soluble in water. With an annual production of 6 million tonnes, the decahydrate is a major commodity chemical product. It is mainly used as a filler in the manufacture of powdered home laundry detergents and making highly alkaline sulfides. It is commonly used in the Kraft process of paper pulping for making highly alkaline sulfides, and used in Glassmaking, Textiles, Food Industry, etc.

3. MAGNESIUM SULPHATE

Sodium sulfate (also known as sodium sulphate or sulfate of soda) is the inorganic compound with formula Na2SO4 as well as several related hydrates. All forms are white solids that are highly soluble in water. With an annual production of 6 million tonnes, the decahydrate is a major commodity chemical product. It is mainly used as a filler in the manufacture of powdered home laundry detergents and making highly alkaline sulfides. It is commonly used in the Kraft process of paper pulping for making highly alkaline sulfides, and used in Glassmaking, Textiles, Food Industry, etc.

4. ZINC SULPHATE

Zinc sulfate describes a family of inorganic compounds with the formula $ZnSO_4(H_2O)_x$. All are colorless solids. The most common form includes water of crystallization as the heptahydrate, with the formula ZnSO4·7H2O. As early as the 16th century it was prepared on the large scale, and was historically known as "white vitriol"[5] (the name was used, for example, in 1620s by the collective writing under the pseudonym of Basil Valentine). Zinc sulfate and its hydrates are colourless solids. It is commonly used in Manufacturing of rayon, Nutrition, Medicine, floating regent for the mining industries etc.

5. POTASSIUM SULPHATE

Potassium sulfate or potassium sulphate also called sulphate of potash (SOP), arcanite, or archaically potash of sulfur, is the inorganic compound with formula K_2SO_4, a white water-soluble solid. It is commonly used in fertilizers, providing both potassium and sulfur. It is commonly used in fertilizer, manufacturing of glass, soda blasting.

6. FERROUS SULPHATE

Ferrous sulfate is a type of iron. You normally get iron from the foods you eat. In your body, iron becomes a part of your hemoglobin and myoglobin. Hemoglobin carries oxygen through your blood to tissues and organs. Myoglobin helps your muscle cells store oxygen. It is commonly used in Pharma industries.

7. CALCIUM CHLORIDE

Calcium chloride is an inorganic compound – a salt with the chemical formula $CaCl_2$. It is white flakes or pellets at room temperature, and is highly soluble in water. Calcium chloride desiccants work well over a temperature range from freezing point up to 80 °C or more. Calcium chloride is often used for de-icing or dust control on gravel roads, in food or as the absorbing agent in desiccants. In much of the world, calcium chloride is derived from limestone as a by-product of the Solvay process. Calcium chloride can also be obtained from brine purification.

8. AMMONIUM CHLORIDE

Ammonium chloride is an inorganic chemical compound with the formula NH4Cl and a white crystalline salt that is highly soluble in water. Solutions of ammonium chloride are mildly acidic. In its naturally occurring mineralogic form, it is known as sal ammoniac. The mineral is commonly formed on burning coal dumps from condensation of coal-derived gases. It is also found around some types of volcanic vents. It is mainly used as fertilizer and a flavouring agent in some types of liquorice. It is the product from the reaction of hydrochloric acid and ammonia.

9. POTASSIUM CHLORIDE

Potassium chloride (KCl, or potassium salt) is a metal halide salt composed of potassium and chlorine. It is odorless and has a white or colorless vitreous crystal appearance. The solid dissolves readily in water, and its solutions have a salt-like taste. Potassium chloride can be obtained from ancient dried lake deposits. [7] KCl is used as a fertilizer, [8] in medicine, in scientific applications, domestic water softeners (as a substitute for sodium chloride salt), and in food processing, where it may be known as E number additive E508.

10. ALUMINIUM CHLORIDE

Aluminium chloride, also known as aluminium trichloride, is an inorganic compound with the formula $AlCl_3$. It forms a hexahydrate with the formula $[Al(H_2O)_6]Cl_3$, containing six water molecules of hydration. Both the anhydrous form and the hexahydrate are colourless crystals, but samples are often contaminated with iron(III) chloride, giving them a yellow colour.

11. SODIUM SULPHIDE

Sodium sulfide is a chemical compound with the formula Na2S, or more commonly its hydrate $Na_2S{\cdot}9H2O$. Both the anhydrous and the hydrated salts in pure crystalline form are colorless solids, although technical grades of sodium sulfide are generally yellow to brick red owing to the presence of polysulfides and commonly supplied as a crystalline mass, in flake form, or as a fused solid. They are water-soluble, giving strongly alkaline solutions. When exposed to moist air, Na_2S and its hydrates emit hydrogen sulfide, an extremely toxic, flammable and corrosive gas which smells like rotten eggs.

12. DICALCIUM PHOSPHATE

Dicalcium phosphate is the calcium phosphate with the formula $CaHPO_4$ and its dihydrate. The "di" prefix in the common name arises because the formation of the HPO_4^{2-} anion involves the removal of two protons from phosphoric acid, H_3PO_4. It is also known as dibasic calcium phosphate or calcium monohydrogen phosphate. Dicalcium phosphate is used as a food additive, it is found in some toothpastes as a polishing agent and is a biomaterial.

Dibasic calcium phosphate is mainly used as a dietary supplement in prepared breakfast cereals, dog treats, enriched flour, and noodle products. It is also used as a tableting agent in some pharmaceutical preparations, including some products meant to eliminate body odor.

13. SODIUM BI SULPHITE

Sodium bisulfite (or sodium bisulphite, sodium hydrogen sulfite) is a chemical mixture with the approximate chemical formula $NaHSO_3$. Sodium bisulfite in fact is not a real compound, but a mixture of salts that dissolve in water to give solutions composed of sodium and bisulfite ions. It appears in form of white or yellowish-white crystals with an odor of sulfur dioxide. Regardless of its ill-defined nature, sodium bisulfite is used in many different industries such as a food additive with E number E222 in the food industry, a reducing agent in the cosmetic industry, and a decomposer of residual hypochlorite used in the bleaching industry.

14. ALUMINIUM HYDROXIDE

Virtually all the aluminium hydroxide used commercially is manufactured by the Bayer process[10] which involves dissolving bauxite in sodium hydroxide at temperatures up to 270 °C (518 °F). The waste solid, bauxite tailings, is removed and aluminium hydroxide is precipitated from the remaining solution of sodium aluminate. This aluminium hydroxide can be converted to aluminium oxide or alumina by calcination.

Aluminum hydroxide is a medication used in the management and treatment of acid indigestion. It is in the antacid class of drugs. This activity outlines the indications, action, and contraindications for aluminum hydroxide as a valuable agent in the management of acid indigestion or topical burns. This activity will highlight the mechanism of action, adverse event profile, and other key factors (e.g., off-label uses, dosing, pharmacodynamics, pharmacokinetics, monitoring, relevant interactions) pertinent for members of the healthcare team in the treatment of patients with acid reflux and related conditions.

15. HYDROCHLORIC ACID

Hydrochloric acid (HCl) is commonly used for the neutralization of alkaline agents, as a bleaching agent, in food, textile, metal, and rubber industries. It is neutralized if released into the soil and it rapidly hydrolyzes when exposed to water.

16. SULFURIC ACID

Hydrochloric acid (HCl) is commonly used for the neutralization of alkaline agents, as a bleaching agent, in food, textile, metal, and rubber industries. It is neutralized if released into the soil and it rapidly hydrolyzes when exposed to water.

17. Sodium Hydroxide

Sodium hydroxide is sometimes called caustic soda or lye. It is a common ingredient in cleaners and soaps. At room temperature, sodium hydroxide is a white, odorless solid. Liquid sodium hydroxide is colorless and has no odor. Sodium hydroxide is a popular strong base used in industry. Sodium hydroxide is used in the manufacture of sodium salts and detergents, pH regulation, and organic synthesis. In bulk, it is most often handled as an aqueous solution, since solutions are cheaper and easier to handle.

Other common uses of sodium hydroxide include:

for making soaps and detergents. Sodium hydroxide is used for hard bar soap, while potassium hydroxide is used for liquid soaps.[30][31] Sodium hydroxide is used more often than potassium hydroxide because it is cheaper and a smaller quantity is needed.

as drain cleaners that convert pipe-clogging fats and grease into soap, which dissolves in waterfor making artificial textile fibres such as rayonin the manufacture of paper. Around 56% of sodium hydroxide produced is used by industry, 25% of which is used in the paper industry. in purifying bauxite ore from which aluminium metal is extracted. This is known as the Bayer process.

- cde-greasing metals
- oil refining
- making dyes and bleaches
- in water treatment plants for pH regulation
- to treat bagels and pretzel dough, giving the distinctive shiny finish

PACKAGING & STORAGE PACKAGING SIZE

Packaging Size

- Liquid: 50 kg, 240 kg & Bulk shipments in road tanker. Powder: 25 kg

Packaging Type

- Liquid: HDPE Carboys & HDPE Barrels.
- Powder: PP Woven Bag with Two Inner LDPE Liner.

Storage

- Storage tank & piping material can be either rubber-lined MS or FRP/HDPE/PVC.
- Store in a cool & dry place.
- Keep away from heat & open flame.

Handling

- After handling the product.
- Avoid breathing sprays and mists.
- Avoid contact with eyes, skin and clothing.
- Keep away from heat & open flame.

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