

FLUORO TECHTM

An ISO 9001:2008 Co.



**Coat your costly
Machinery
To Save High Cost
of Replacement**

Replacing Hastelloy, Titanium, Glass Lined
etc. with Fluoropolymer Coatings Like Halar
(ECTFE), TEFLON[®], PVDF, PTFE, PFA etc.

OVEN SIZE 10 X 10 X 10 Ft.
(Width x Height x Length)

www.ftcoat.com

FluoroTech is an ISO 9001:2008 company supplying wide range of fluoro-polymer coatings like Halar/Teflon, Tefzel, PTFE, PFA since decade. FluoroTech has got 5000 sq.ft works near Mumbai to cater the various activity of coating. Our mission is to resolve customer problem with out compromising quality at affordable price. Dedicated workforce of FluoroTech accept the challenges and always try to deliver more than expected by customer. FluoroTech has modern equipment handling system, testing equipment. We have decade of experience in Halar (ECTEF), Tefzel (ETFE), PTFE, PFA, PVDF and Antistatic (Conductive) Halar coating. FluoroTech uses genuine raw material from original suppliers like Halar from Solvay USA, Tefzel, PTFE, PFA from all DuPont to assure quality. FluoroTech is certified coater for Halar coating. FluoroTech is the only coating firm which has been to Solvay's Halar manufacturer site for field training of coating process.

Our coating processes increase the life, value and usefulness of pharma, chemical equipment and many other products by creating protective and smooth surfaces that eliminate problems. Problems such as friction, sticking, corrosion, noise, abrasion, and static charge that are easily resolved with our coating techniques.

Halar / ETFE / PTFE / PFA coating has some distinct advantages;

- A universal chemical resistance
- Free from maintenance
- Easy to clean
- Higher performance at lower cost
- Seamless construction

Due to outstanding corrosion resistance and relatively low cost of fluoropolymer coating, it has established as an important alternative to exotic alloy and brittle glass lining as a construction material for the chemical and pharma equipment.

We are also leading player in supplying conductive coating, which enhance safety of plant persons and equipment. FluoroTech also has facility to manufacture tanks, vessels (up to 3 KL), filters etc. FluoroTech provide one stop solution for the Halar / Teflon coated vessels and Tanks.

FluoroTech client base includes many Pharma MNC's, chemical manufactures and OEM.



HALAR (ECTFE)

Introduction:

Halar ECTFE (ethylene-chlorotrifluoroethylene) is an alternated copolymer of ethylene and chlorotrifluoroethylene. It is a semi crystalline and thermoprocessable fluoropolymer from Solvay Solexis, manufactured at its ISO-certified plant in Orange, Texas, USA.

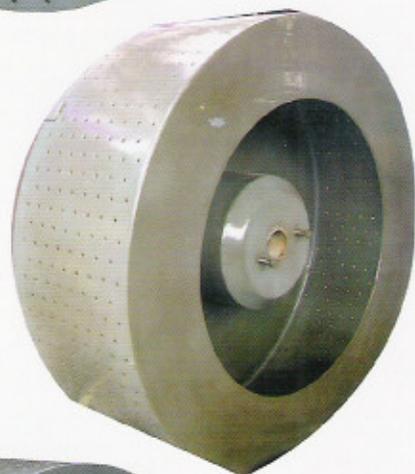
Due to its chemical structure, Halar offers a unique combination of properties. Halar provides excellent chemical resistance and electrical insulating properties combined with a broad-use temperature range from cryogenic to 150°C. It is a tough material with excellent impact strength over its broad use-temperature range. Halar is one of the best fluoropolymer for both abrasion and permeation resistance because of its tight internal structure.

Halar is suitable for demanding applications :

- ✱ Mechanically tough with excellent cut through and abrasion resistance
- ✱ Works from Full Vacuum to 10 Kg/cm²
- ✱ High tensiles and elongation
- ✱ Outstanding impact at room temperature and down into the cryogenic
- ✱ Dimensionally stable
- ✱ Excellent release properties
- ✱ Resistant to Cobalt-60 radiation
- ✱ High purity: it does not contaminate high purity fluids
- ✱ Easily fabricated into complex shapes by normal melt processable techniques
- ✱ Extremely smooth surface
- ✱ For Use in alkaline area up to pH14

Jobs completed:

FluoroTech has decade experience in Halar (ECTFE) coating . FluoroTech successfully completed Job like centrifuge of 24" ,36" ,48" ,60" size , valves ,pipe lines , filters ,Tanks of 100 Lts to 3 KL ,Columns , Vaccume tray dryers ,level indicators , Autoclaves and custom made parts of the equipments etc.



Anti-Static HALAR (ECTFE)

Introduction:

Halar ECTFE (ethylene-chlorotrifluoro-ethylene) is an alternated copolymer of ethylene and chlorotrifluoroethylene. Due to its chemical structure, Halar offers a unique combination of properties. Halar provides excellent chemical resistance and electrical insulating properties combined with a broad-use temperature range from cryogenic to 150°C.

Pharma and Chemical industry manufacturing process involved use of ingredients and unit operations which may result in generation of static electrical charge. Many processes carried out in the Halar coated equipments. Since Halar is good electrical insulator, this accumulation of static charge on the surface of equipment may ignite combustible mixture in the coated equipment.

Anti-static Halar or Conductive Halar coating is good conductor of the static charge developed during process with no compromise on chemical resistance. Equipment coated with this material will facilitate to removal of charge from every part on surface.

Jobs completed:

FluoroTech has experience in conductive Halar coating. FluoroTech successfully completed Job like centrifuge of 24", 36", 48", 60" size, pipe lines, filters, Tanks, Columns, level indicators, Autoclaves and custom made parts of the equipments etc.



Tefzel(ETFE)

Introduction

DuPont™ Tefzel® is a modified ETFE (ethylene-tetrafluoroethylene) fluoro-polymer .Tefzel® combines superior mechanical toughness with an outstanding chemical inertness that approaches that of Teflon® fluoro-polymer resins. Tefzel fluoro-polymers is melt-processible thermo plastics. This is part of the DuPont family of fluorine-based products . Tefzel is weather resistant, inert to most solvents and chemicals, and is hydrolytically stable. It has substantially better resistance to radiation .Electrically, Tefzel is an excellent low-loss dielectric, with a uniformity of electrical properties not normally found with other thermoplastics. Tefzel can best be described as a rugged thermoplastic with an outstanding balance of properties. Mechanically, it is tough, has medium stiffness (1,170 MPa, 170,000 psi), impact, and abrasion resistance. Tefzel is typically considered to have a no load continuous use temperature of 150°C (302°F).

Chemical Resistance

Tefzel has outstanding resistance to attack by chemicals and solvents that often cause rapid deterioration of other plastic materials. It is surpassed only by Teflon in resistance to chemicals. Tefzel is inert to many strong mineral acids, inorganic bases, halogens and metal salt solutions. Carboxylic acids, anhydrides, aromatic and aliphatic hydrocarbons, alcohols, aldehydes, ketones, ethers, esters, chlorocarbons, and classic polymer solvents have little effect on Tefzel.

Jobs completed:

FluoroTech has got wide experience in Tefzel (ETFE) coating . Fluortech successfully completed Job like centrifuge of 24" ,36" ,48" size , valves ,pipe lines , filters ,Tanks of 100 Lts to 3 KL .etc.

Properties :

Photo of job completed



Teflon® PFA

Many of today's pharmaceutical and biopharmaceutical manufacturing facilities must be flexible to produce multiple products while meeting both traditional and growing needs for product purity, cleanability, durability and low maintenance costs. To meet these demands, engineers are turning to piping, components and vessels coated with DuPont fluoropolymers. Traditional stainless steel and glass no longer deliver the best results.

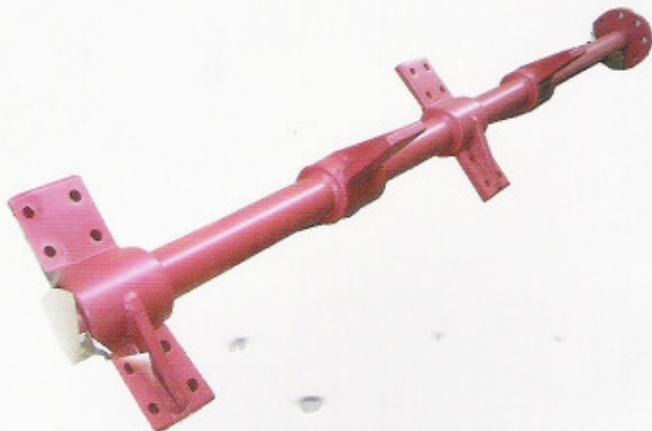
Teflon® PFA is a perfluoroalkoxy copolymer resin available in pellet or powder. Teflon® PFA combines the processing ease of conventional thermoplastic resins with the excellent properties of Teflon® polytetrafluoroethylene (PTFE). Products manufactured from Teflon® PFA can offer continuous service temperatures, up to 260°C (500°F) and also provides superior creep resistance at high temperatures, excellent low-temperature toughness, and exceptional flame resistance..

Teflon® PFA (PerFluoroAlkoxy) offers similar properties to FEP, but is considered more of a premium resin. PFA is preferred when extended service is required in hostile environments involving chemical, thermal, and mechanical stress. PFA offers high melt strength, stability at high processing temperatures, excellent crack and stress resistance, a low coefficient of friction, and more than 10 times the Flex life of FEP.

It has high resistance to creep and retention of properties after service at 500°F (260°C), with useful properties at -320°F (-195°C). PFA also meets FDA 21CFR.177.1550.

Jobs completed:

FluoroTech has long experience in Du Pont Teflon® PFA coating . FluoroTech successfully completed Job like centrifuge of 14" ,36" size , valves ,pipe lines , filters ,Tanks ,level indicators and custom made parts of the equipments etc.



PVDF

Polyvinylidene Fluoride, or PVDF is a highly non-reactive and pure thermoplastic fluoropolymer. PVDF is a specialty plastic material in the fluoropolymer family; it is used generally in applications requiring the highest purity, strength, and resistance to solvents, acids, bases and heat and low smoke generation during a fire event. Compared to other fluoropolymers, it has an easier melt process because of its relatively low melting point of around 177°C.

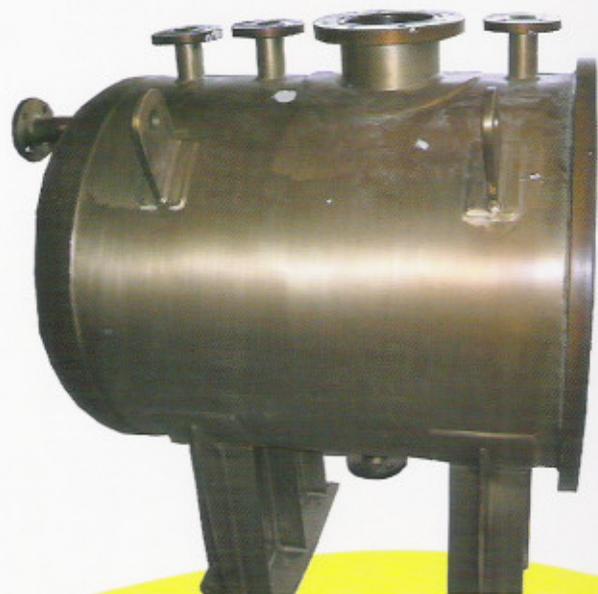
It has a low density (1.78) and low cost compared to the other fluoropolymers.. It can be injected, molded or welded and is commonly used in the chemical, Pharma semiconductor, medical and defense industries .

The demand for PVDF has been growing remarkably because of its outstanding properties such as:

- ✳ Mechanical strength and toughness.
- ✳ High abrasion resistance, enabling it to be used with slurries.
- ✳ High thermal stability under operating and processing application;
- ✳ High dielectric strength.
- ✳ High purity.
- ✳ Readily melt processable.
- ✳ Resistant to most chemicals and solvents.
- ✳ Resistant to ultraviolet and nuclear radiation.
- ✳ Resistant to weathering, because of its transparency and inertness to ultraviolet (UV) rays.
- ✳ Resistant to fungi.
- ✳ Low permeability to most gases and liquids.
- ✳ Low flame and smoke characteristics.

Jobs completed:

FluoroTech has technically skilled manpower who has experience in PVDF coating . FluoroTech successfully completed Job like centrifuge of 24" ,36" size , filters ,Tanks ,level indicators and custom made parts of the equipments etc.



Teflon® PTFE

Products made with DuPont™ Teflon® PTFE (polytetrafluoroethylene) fluoropolymer resins have exceptional resistance to high temperatures, chemical reaction, corrosion, and stress-cracking. The mechanical toughness, electrical, and low-friction properties of Teflon® make it the preferred plastic for a host of applications and different processing techniques.

PTFE Characteristics & Benefits

The extraordinary characteristics of PTFE make it the ideal choice in a wide range of products and applications. PTFE has a coefficient of friction that is one of the lowest of any material. PTFE is extremely abrasion resistant, making it adaptable to the harshest environments. In addition, PTFE can withstand a wide range of temperatures, from 260 Degrees Centigrade down to -270 Degrees Centigrade, and can even handle brief exposures at higher temperatures. PTFE also has excellent flame resistance due to its extremely high melting point, along with a very low rate of smoke generation and heat release. Another advantage of PTFE is that it is chemically inert and pure, and has no additional stabilizers, lubricants or plasticizers that would taint process fluids.

PTFE is extremely corrosion resistant, especially to acids, and harsh inorganic and organic chemicals. Additionally, the original properties PTFE remain the same even after extended time periods in water. Furthermore, PTFE is resistant to atmospheric aging in the form of discoloration, oxidation, and, as previously noted, is not affected by ultraviolet light.

Jobs completed:

FluoroTech has got wide experience in PTFE coating. Fluortech successfully completed Job like Shaft, stirrers, valves, pipe lines, filters, Tanks, etc.



TYPICAL PROPERTIES

Property	ASTM or UL test	Halar (ECTFE)	PVDF	ETFE	PTFE	PFA
PHYSICAL						
Density(g/cm ³)	D792	1.68	1.77	1.71	2.16	2.12 - 2.17
Water Absorption, 24 hrs (%)	D570	0.01	< 0.04	< 0.01	< 0.01	< 0.03
MECHANICAL						
Tensile Strength (psi)	D638	7000	6,300	6,700	3,900	3,600
Elongation (%)	D638	200	300 - 450	300	300	300
Flexural Modulus (psi)	D790	240000	-	1,70,000	72,000	85,000
Compressive Strength (psi)	D695	-	9,000	2,470	3,500	-
IZOD Notched Impact (ft-lb/in)	D256	No Break	3	No Break	3.5	No Break
Hardness, Shore D	D785	D75	D75	D72	D50	D60
THERMAL						
Melting Temp (°F / °C)	D3418	465 / 240	332 / 166	512 / 267	635 / 335	582 / 305
Max Operating Temp (°F / °C)	-	300 / 150	275 / 130	311 / 155	500 / 260	500 / 260
Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	D696	5.6	6.6	7.5	7.5	7.5
Thermal Conductivity (BTU-in/ft ² -hr-°F)		1.1	1.2	1.65	1.7	1.3
Flammability Rating	UL94	V-O	V-O	V-O	V-O	V-O
ELECTRICAL						
Dielectric Constant at 1 MHz	D150	2.6	8.5	2.6	2.1	2.1
Dielectric Strength (V/mil) short time, 1/8" thick	D149	2000	1700	1,800	285	> 2000
Dissipation Factor at 1 MHz	D150	0.009	0.05	0.006	< 0.0002	0.0001
Volume Resistivity (ohm-cm)at 50% RH	D257	10 E 15	1.5 x 10 ¹⁵	> 10 ¹⁷	> 10 ¹⁸	> 10 ¹⁸

NOTE: The information, recommendations and opinions contained herein is only a guide and is intended solely for your consideration, inquiry and verification. The suitability of any material under specific conditions of application is not guaranteed in any manner. Fluoro Tech coatings does not assume legal responsibility for the use of data presented here in any form, under any circumstances, any application, test or communication. Nothing contained herein is to be interpreted as a license or authorization to operate under or infringe any patent.

- An Iso 9001 : 2008 Organization
- 5000 Sq. Ft. Working Area
- Oil Free Compressor With Air Dryer For Clean Air
- Three Diff. Size Ovens 10' X 10' X 10' , Maximum
- Advance Material Handling Equipment
- Quality Control Checks At Every Stage
- Trained And Dedicated Workforce
- 24 x 7 Customer Service

JOB COMPLETED BY US :

CENTRIFUGE MACHINES (14", 24", 36", 48", 60")
 REACTORS 6.3 KL
 VARIOUS TYPE OF FILTERS
 ROTARY VACUUM DRYER (RVD)
 VACUUM TRAY DRYER (VTD)
 VESSELS
 NUTSCH FILTER
 CONDENSER
 LEAF FILTER
 FBD PRODUCT BOWL
 VALVES
 PUMPS
 PIPE LINES (UP TO 1 MTR)
 THERMOWELL
 MANHOLES, FLANGES
 REDUCER
 INSTRUMENTS
 TRAY DRYER
 COLUMN (10 MTR. LONG)
 ACID TRAP

ORIGINAL EQUIPMENT MFG.

ACE INDUSTRIES
 AEROLITE ENGG. PVT. LTD.
 ANUP ENGG.
 BIFRIEND ENGG. WORKS
 BLINEX FILTER COAT PVT. LTD.
 BOMBAY PHARMA EQUIPMENTS PVT. LTD.
 CHEMAC EQUIPMENTS PVT. LTD.
 CHEMO FAB INDUSTRIES
 CLEARSEP TECHNOLOGIES
 DALAL ENGG. PVT. LTD.
 D. PARIKH ENGG. WORKS
 DOSHI ENGG. WORKS
 FINIX FILTER
 FPC ENGG. WORKS PVT. LTD.
 HI-TECH APPLICATOR
 HRS PROCESS SYSTEMS PVT. LTD.
 JOFALO ENGG. CO.
 KLENZAIDS CONTAMINATION CONTROLS PVT. LTD.
 KORES (INDIA) LTD.
 KUMAR ORGANICS PRODUCTS LTD.
 LARSEN & TOUBRO LTD.
 LESTER & DYNAMIKS (INDIA)
 MAHADEV ENGG. WORKS
 NEELA SYSTEMS LTD.
 NIMA ENGG. PVT. LTD.
 ORIENTAL MFG. PVT. LTD.
 PARKSAN FILTER
 PERFECT ENGG. & ALLIED WORKS PVT. LTD.
 PHARMA TECH
 PRESTO CHEMTECH
 PROMAS ENGINEERS PVT. LTD.
 SANDEEP ENGG. WORKS
 SHARAD ENGINEERING
 SHREYAS ENGG. WORKS
 SK SYSTEM PVT. LTD.
 SUBODH ENGG. PVT. LTD.
 SUKHRAS MACHINE
 STEELCON ENGINEERING
 STERLING FABRICATING ENGINEERS PVT. LTD.
 THERMOTEC ENGG. PVT. LTD.
 VATS & VESSELS
 WALMIK ENGINEERS

OUR CLIENTS LIST PHARMA & BULK DRUG MFG. & EXPORTER :-

AARTI DRUGES LTD.
 ACTGEN PHARMA PVT. LTD.
 ALEMBOIC LTD.
 APOTEX PHARMACHEM INDIA PVT. LTD.
 AQUAPHARM CHEMICALS PVT. LTD.
 ARCH PHARMALABS LTD.
 AURO LABORATORIES LTD.
 BILAG INDUSTRIES PVT. LTD.
 CADILA HEALTHCARE LTD
 CADILA PHARMACEUTICALS LTD.
 CALIBRE CHEMICALS PVT. LTD.
 CIPLA LTD.
 COLOUR CHEM LTD.
 CTX LIFE SCIENCES PVT. LTD.
 DEEPAK NITRATE LTD.
 DELTA FINOCHEM PVT. LTD.
 DHARAMSI MORARJI CHEMICAL CO. LTD.
 DR. REDDY LABS
 EMMELLEN BIOTECH PHARMACEUTICALS LTD
 EMCURE PHARMACEUTICALS LTD.
 GLAXO SMITH KLINE PHARMACEUTICALS LTD.
 HALIDES CHEMICALS PVT. LTD.
 HENEY CHEMICAL
 HIGH POLYMER LTD.
 ISAGRO (ASIA) AGROCHEMICALS PVT. LTD.
 INGA LAB
 IPCA LABORATORIES LTD.
 JOHNSON MATTHEY CHEM. (I) PVT. LTD.
 JUBLIANT ORGANOSYS LTD.
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 MAHARASHTRA ORGANO METALLIC CATALYSTS PVT. LTD.
 MEDITAB SPECIALITIES PVT. LTD.
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 MEHTA PHARMACEUTICAL IND. LTD.
 MERCK DEVELOPMENT CENTRE PVT. LTD.
 MYLAN INDIA PVT. LTD.
 MULTI ORGANICS PVT. LTD
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 PRATAP ORGANICS PVT. LTD.
 PROCTER & GAMBLE HOME PRODUCTS LTD
 POLY PLAST CHEMI PLANTS (I) PVT. LTD.
 ORCHID CHEMICAL
 RELIANCE LIFE SCIENCES PVT. LTD.
 TEVA API INDIA LIMITED
 SAMRAT REMEDIES LTD.
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 SHARON BIO-MEDICINE LTD.
 SOHAN HEALTHCARE PVT. LTD.
 S R BIO CHEM
 SUN PHARMACEUTICALS IND. LTD.
 SUPRIYA LIFE SCIENCE LTD.
 SWATI SPENTOSE PVT. LTD.
 UCB INDIA LTD.
 USV LTD.
 VINATI ORGANICS
 UNIQUE CHEMICALS
 UNIMARK REMEDIES LTD.
 UNITED PHOSPHORUS LTD.
 YASHO IND. PVT. LTD.



INSTRUMENTATION EQUIPMENT MFG.

COMPACT EQUIPMENTS
 LAVCON INSTRUMENTS
 SHOOPU TOOLS
 VALVES MFG.
 KHD VALVES



FLUORO TECH™

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