



GENERATION FOUR ENGITECH LTD.

HI TECH THERM ULTRA

Premium Thermic Fluid



HITECH THERM

ULTRA

Synthesized chemistry to perform



The largest and most appreciated manufacturer, suppliers and marketers of Silicon Green Premium Synthetic Thermic fluid. We have more than 3000 satisfied customers like **Marico India Ltd., Adani Wilmar Ltd., Jyothy laboratories Ltd., JK Tyre Ltd., Pidilite Industries, Maruti Texiles, Ruchi Soya Industries Ltd.**, and many more all over the country. We also export our enriched thermic fluid to major thermic fluid consumers on the globe .

Company Profile



Utilizing Skilled Knowledge and Delivering Quality Performance

Difference between Mineral & Synthetic based Thermic Fluids:

Mineral Based Thermic Fluid:

They are petroleum-based and most consist of paraffinic and naphthenic hydrocarbons with huge number of carbon atoms and natural chemistry. In the petroleum refinery crude oil goes through various refining processes like fractional Distillation, Cracking, Isomerisation, Hydrogenation etc.

This separation is purely on the basis of their boiling ranges. It means whatever may be the chemical structure (Paraffinic, Naphthenic, etc) and if it boils within certain temperature range it will be classified as a certain petroleum product. A particular boiling range petroleum refinery cut is being used as base oil for mineral based thermic fluid. Since source of raw material is mineral oil (Petroleum Crude) it is called mineral based thermic fluid.

Synthetic Based Thermic Fluid:

Synthetic Fluid - "Aromatics", consist of benzene - based structures namely alkyl substituted aromatics, chemical compounds that are artificially made (synthesized) and developed with a particular length of straight and Saturated Chain of Alkyl group which is made to react with particular Aromatic group to produce Di-Alkyl Aromatic, this process is conducted under controlled chemistry and scientific research and supervision, since molecule of HT-ULTRA is made by "synthesis", it is called as synthetic fluid. Due to presence of Aromatic group and particular arrangement of short and saturated alkyl group in the molecule, it has far better properties like Oxidation resistance, Thermal stability, low carbon depositions, low viscosity, low rate of evaporation loss at operating temperature etc. Thus due to its properties its deterioration rate is reduced by approx. half. In other words it has got double the life as compared to mineral base thermic fluids.



Introducing a Superior, Innovative and More Enhanced Property product in the field of Synthetic heat transfer thermic fluid approved by OEMs.

HI TECH THERM ULTRA

WITH POWERFUL ANTIOXIDANT & SILICON GREEN ADDITIVES

An unique Thermic fluid which is VERSATILE, STABLE and PREFERRED by the OEMs. It is an outstanding premium quality product to Enhance your Heater or Thermopac performance with:

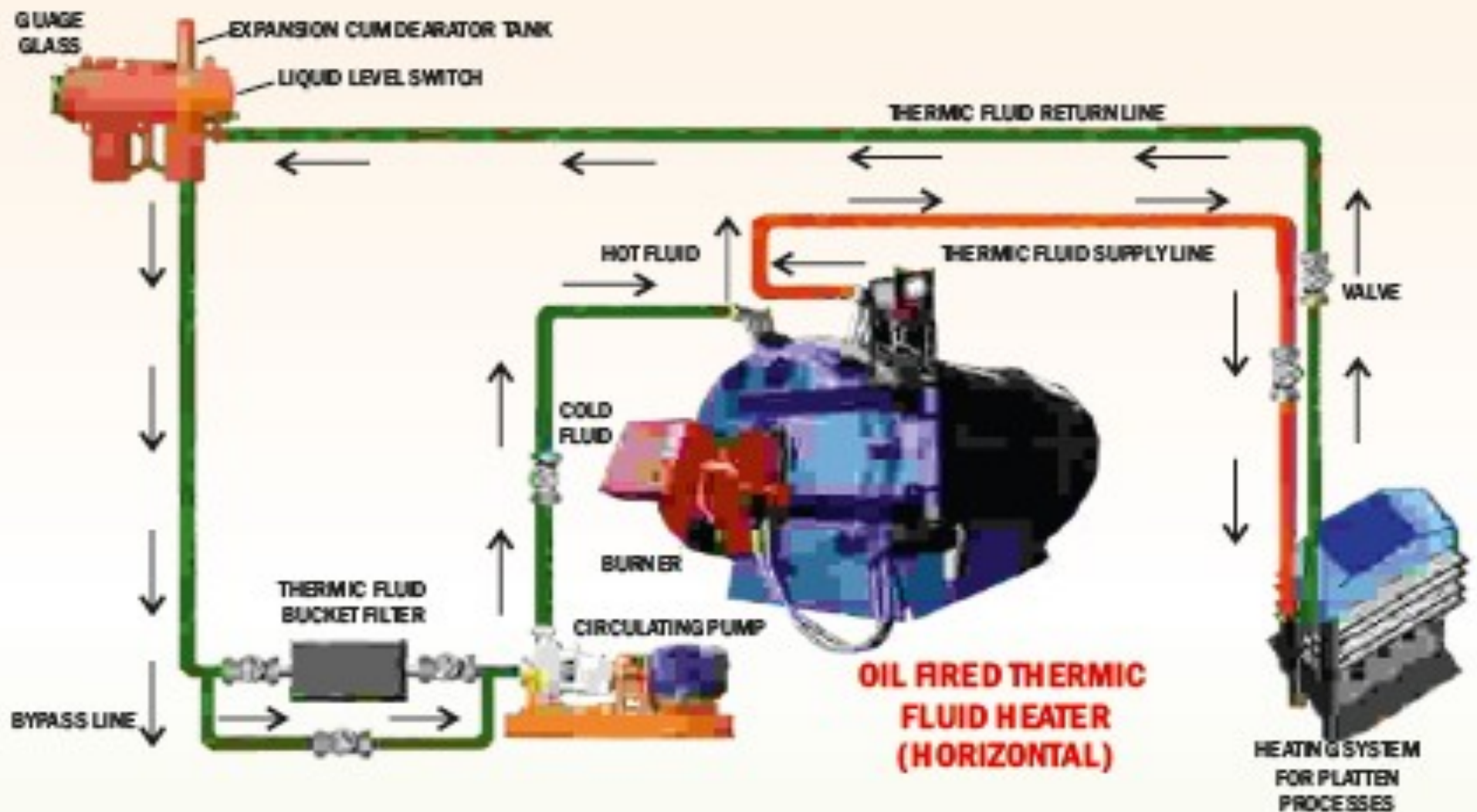
- High oxidation stability
- High flow rate
- Low viscosity
- Negligible carbon contents
- Lower top up requirement,
- Thermal stability
- Top Technology with silicone green additive
- Long Life & Trouble free high efficient
- Super Premium quality Fourth generation synthetic thermic fluid
- Fully compatible with all types of other thermic fluid
- (mineral/synthetic)
- Safety to device
- Smooth Functioning
- Cost effective
- Eco friendly clean environment
- Non hazardous

**The HT-ULTRA Thermic fluid... which can be trusted fully as
"We prove what we write"**

HT-ULTRA HEAT TRANSFER THERMIC FLUID :

We maintain an Object Oriented Productivity, i.e. maximum Heat Transfer with high flow rate. It is a specially Designed product with enhanced properties particularly for Thermopac System. **Premium quality Synthetic Base Thermic fluid with Controlled Chemistry and Nano particle blending technology using powerful antioxidant and other additives.**

HT-ULTRA is the preferred product for a wide range of heat transfer applications. It is stable, does not decompose readily at high temperatures, and can be used effectively in liquid phase systems. Thermic fluid has low viscosity throughout the entire operating range results in efficient heat transfer; start-up and pumping problems are minimized. The thermic fluid is non-corrosive to common metals and alloys.

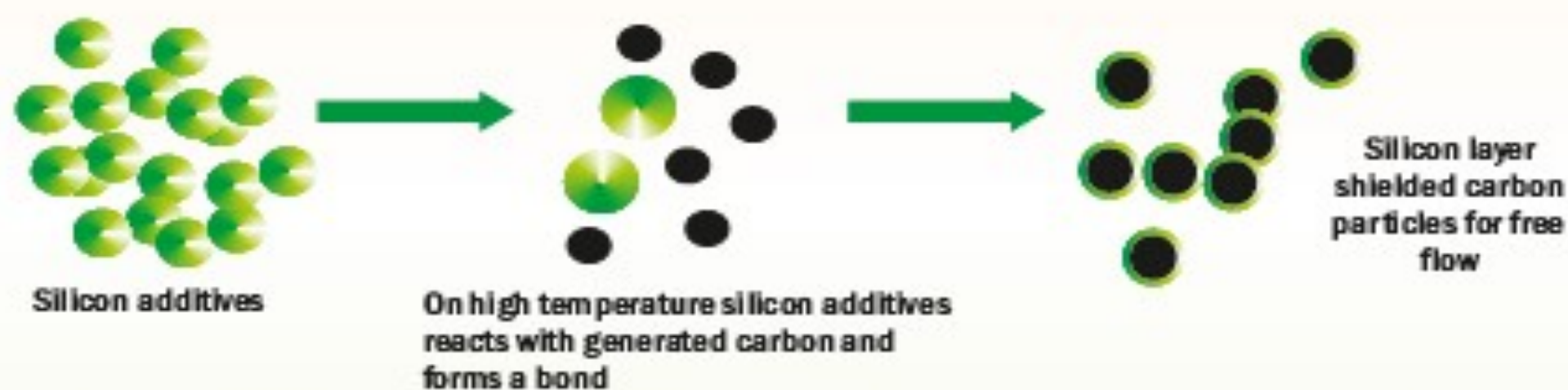


HT-ULTRA - Fulfilling the Following thermic fluid selection criteria :

The important properties that help to determine the viability of a heat transfer thermic fluid. We have fulfilled the technical criteria and are mentioned below.

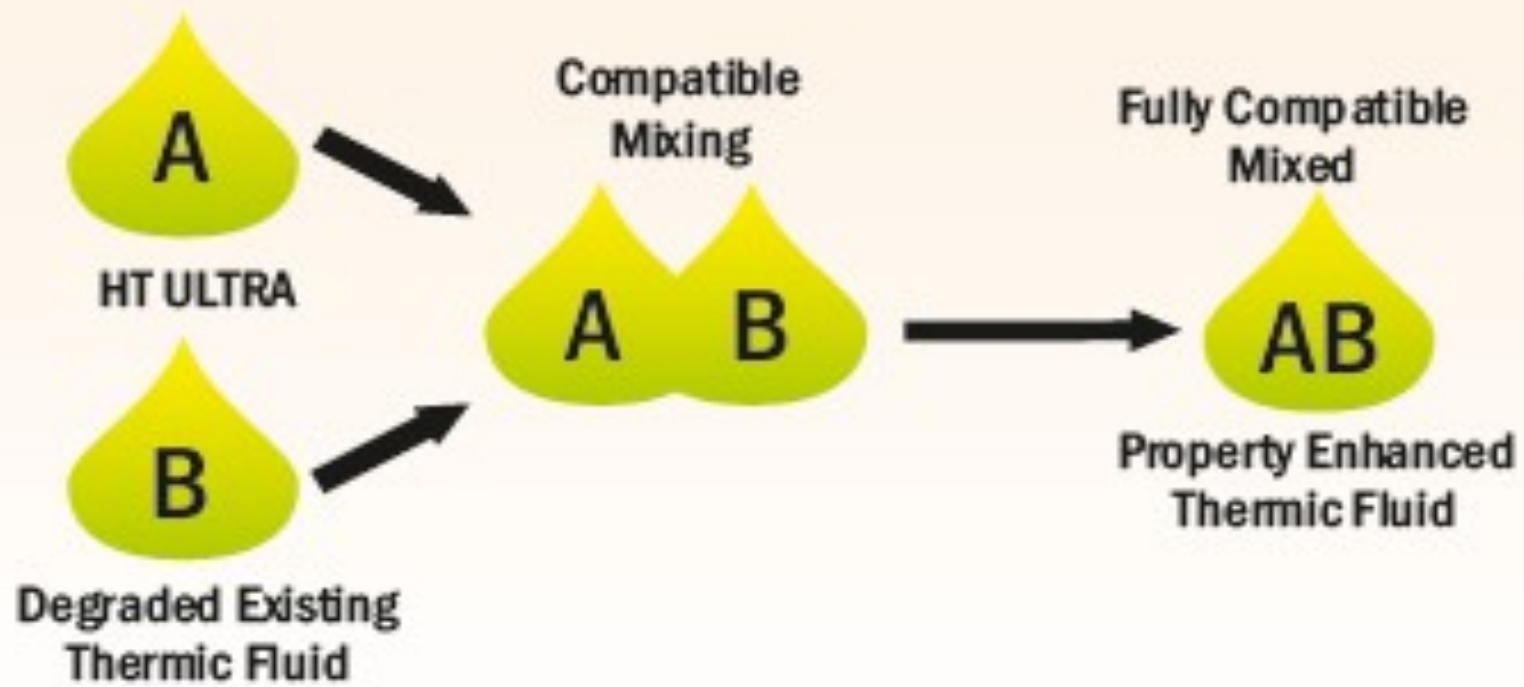
1. **Thermal Stability** - HT-ULTRA thermic fluid possesses unsurpassed thermal stability at temperatures of -15°C to 325°C . The maximum recommended film temperature is 350°C .
2. **Maximum Bulk Temperature Range** - HT-ULTRA thermic fluid is recommended to be used in the liquid phase from -15°C to 325°C .
3. **Freeze Point** - HT-ULTRA thermic fluid has a freezing point of -35°C and can be used without steam tracing in installations protected from the weather.

4. **Viscosity** - The viscosity of HT-ULTRA thermic fluid is low up to 22cSt @ 40°C. As a result, start-up problems and thermic fluid damages are minimized with better heat transfer and flow rate.
5. **Negligible Vapor Pressure:** It is the miraculous property of synthetic thermic fluid which leads to very less or negligible vapor pressure due to molecular structures.
6. **Additive % in product** - HT ULTRA is blended with special silicon additives. This silicon additives forms layer on the carbon particles and stop the deposition of carbon in the system i.e. carbon flows along with thermic fluid and special anti oxidants immune the fluid against oxidation. Blend of special and powerful antioxidant additives resulting in much better performance than other market products.



7. **Co-efficient of Thermal Expansion** - Expansion of the thermic fluid due to heat in relation to temperature & volume shows the increase in volume on increase of temperature, higher expansion indicate decrease in viscosity and higher heat transfer. HT-ULTRA product has expansion rate of 0.00096/°C
8. **Corrosivity** : HT-ULTRA heat transfer thermic fluid is non-corrosive toward common metals and alloys. Even at the high temperatures equipment usually exhibits excellent service life. Original equipment in many systems can even used after 20 years of continuous service.
9. **Flash Point (COC)** - Flash point is indication of first point of fire risk and it has no relation with the performance of the thermic fluid but with plant running without nitrogen blanketing should have minimum of 170°C, and as HT-ULTRA thermic fluid has more and stable flash Point of 210°C, so it can be counted better in this regards.

10. Compatibility - HT-ULTRA is fully compatible with most of the other brands of Mineral as well as Synthetic Thermic fluids in the market. **Note: We do not suggest adding our thermic fluid with local brands. Do not add before you get a return compatibility confirmation from our own India's only specialized thermic fluid testing laboratory.**



Note : All the mentioned criteria's will be at their best if the Thermopac system is perfectly designed and well maintained.

Outstanding Features !!!



Benefits of adding Hi-Tech Therm Ultra in your existing thermic fluid:

- 1. Decreases Viscosity :** If a lower viscosity thermic fluid (HT-ULTRA) is added in an existing system it will get an advantage of overall decrease in viscosity.
- 2. Resisting Carbon Particles deposition :** HT-ULTRA with its silicon additive technology makes a layer on the carbon particles and prevents their sticking nature. Thus the carbon particles keep on flowing along with the thermic fluid without getting stagnancy. Resulting in good heat transfer even if the carbon exists in the system.
- 3. Blend of Special Anti-Oxidants:** Addition of HT-ULTRA (which is blended with special types of anti-oxidant) in your existing thermic fluid will develop a strong immunity against oxidation.
- 4. Optimum bulk temperature:** HT-ULTRA has an optimal range of temperature from -15°C to 325°C , which minimizes the chances of thermal cracking at higher accidental temperatures and supports the thermic fluid to easily with stand higher temperature altitudes.
- 5. Decreased Carbon Emission:** The chemistry and mechanism of Hi-Tech Therm Ultra is developed in such a way that even if there is thermal cracking or oxidation cracking it releases less carbon and your system last long with good efficiency.

“Coming Together Is A Beginning, Keeping Together Is Progress, Working Together Is Success.”

- Henry Ford

“We cannot solve our problems with the same thinking we used when we created them.”

- Albert Einstein

“There Is A Way To Do It Better - Find It.”

- Thomas A. Edison

**An Ultimate Thermic Fluid
For Industries**



Physical Properties of HT-ULTRA Thermic fluid :

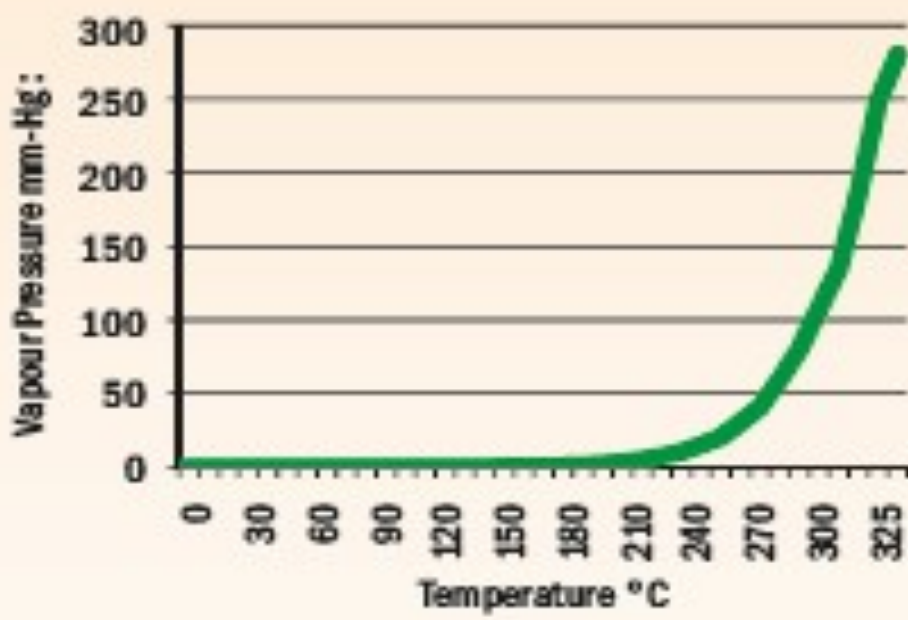
TECHNICAL SPECIFICATIONS	HT-ULTRA
Appearance	Silicon Transparent Green
Composition	Eutectic Mixture of Hydrocarbons
Moisture Content, Maximum	90 ppm
Maximum Bulk Temperature	325 °C (617 °F)
Boiling Point	365 °C (689 °F)
Optimum Use Range	-15°C to 325°C (-15°F to 617°F)
Extended Maximum Use Temperature	325 °C (617 °F)
Maximum Film Temperature	350 °C (662 °F)
Total Acidic Number	0.01 mg KOH/g
Vapour Pressure @325 °C	280.5 mm-Hg
Thermal Conductivity @325 °C	0.0955 W/m. °K
Density at 25 °C	0.860 gm/ml
Coefficient of Thermal Expansion at 200°C	0.00096 1/ °C (0.000534/ °F)
Pour Point	-35 °C (-35 °F)
Flash Point (ASTM D-92)	210 °C (410 °F)
Kinematic Viscosity	
@ 40 °C	22 mm ² /s (cSt)
@ 100 °C	3.82 mm ² /s (cSt)
Minimum Temperatures for Fully Developed Turbulent Flow (Re = 10000)	
10 ft/sec, 1-in tube	80 °C (176°F)
20 ft/sec, 1-in tube	58 °C (136.4 °F)
Transition Region Flow (Re = 2000)	
10 ft/sec, 1-in tube	28 °C (82.4 °F)
20 ft/sec, 1-in tube	14 °C (57.2 °F)

Tabulation of Properties of HT-ULTRA with respect to temperature

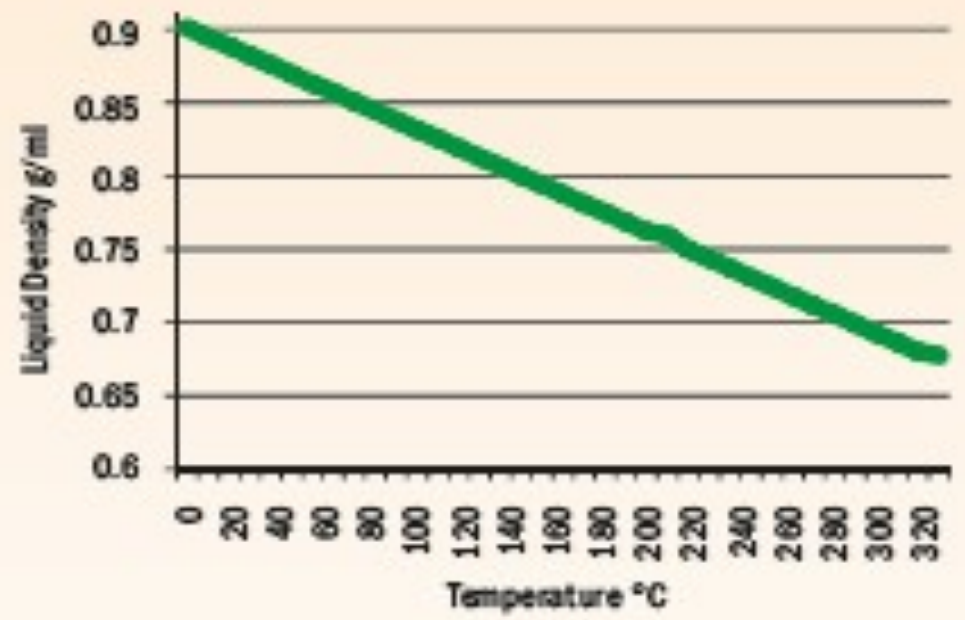
Temperature	Specific Heat	Liquid Density	Liquid Viscosity	Liquid Thermal Conductivity	Vapour Pressure
°C	kJ/kg°K	g/ml	cSt	W/m.°K	mm-Hg
-30	1.791	0.907	1180.5	0.1402	-
-20	1.802	0.901	850	0.1389	-
-10	1.811	0.896	380	0.1377	-
0	1.813	0.889	159	0.1364	-
10	1.843	0.88	84	0.1352	-
20	1.867	0.876	48	0.1339	-
30	1.894	0.865	30	0.1326	0
40	1.935	0.86	22	0.1314	0
50	2.018	0.857	14.3	0.1301	0
60	2.044	0.845	10.34	0.1289	0
70	2.077	0.84	7.58	0.1276	0
80	2.101	0.838	6.98	0.1263	0
90	2.143	0.83	4.88	0.1251	0
100	2.179	0.823	3.82	0.1238	0
110	2.213	0.817	3.12	0.1225	0
120	2.228	0.81	2.78	0.1213	0
130	2.291	0.748	2.52	0.12	0.15
140	2.311	0.793	2	0.1188	0.25
150	2.344	0.79	1.75	0.1175	0.46
160	2.379	0.782	1.53	0.1162	0.83
170	2.421	0.775	1.38	0.115	1.26
180	2.48	0.768	1.2	0.1137	2.01
190	2.493	0.762	1.06	0.1124	3.18
200	2.535	0.755	0.9	0.1119	4.85
210	2.579	0.749	0.88	0.1099	7.3
220	2.599	0.739	0.85	0.1087	10.1
230	2.623	0.731	0.8	0.1074	15.09
240	2.651	0.724	0.72	0.1061	20.1
250	2.709	0.717	0.69	0.1049	30.3
260	2.736	0.71	0.65	0.1036	40.7
270	2.757	0.701	0.59	0.1023	59.3
280	2.814	0.694	0.54	0.1011	80
290	2.853	0.689	0.51	0.0998	180
300	2.891	0.678	0.5	0.0985	135
310	2.915	0.67	0.46	0.0973	186
320	2.915	0.662	0.42	0.096	249
325	2.969	0.657	0.4	0.0955	280.5

Above mentioned figures are as per laboratory observation. These are for reference only and may vary from batch to batch; hence do not attract any legal reference whatsoever.

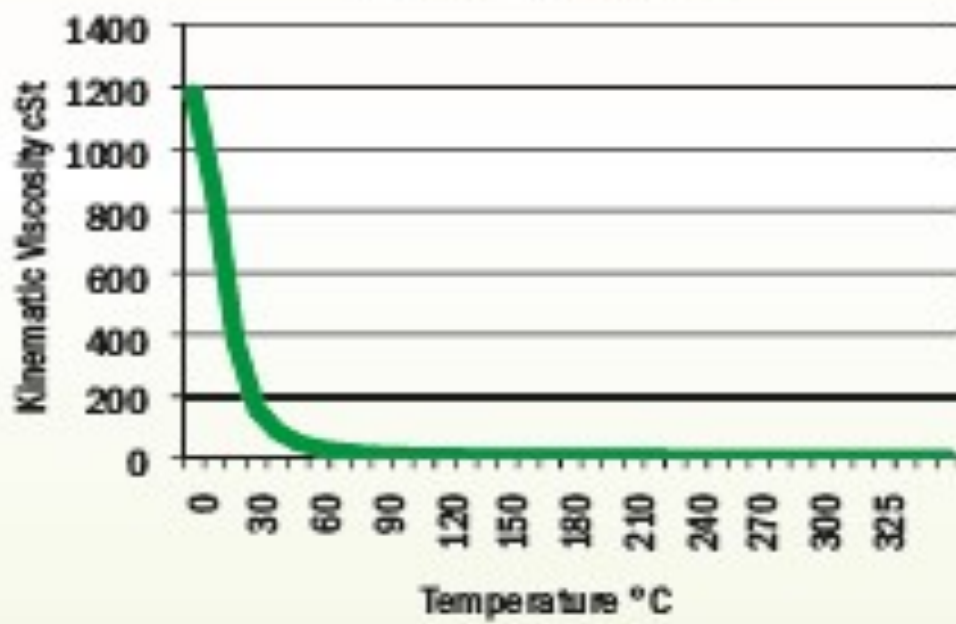
Fluid Vapour Pressure



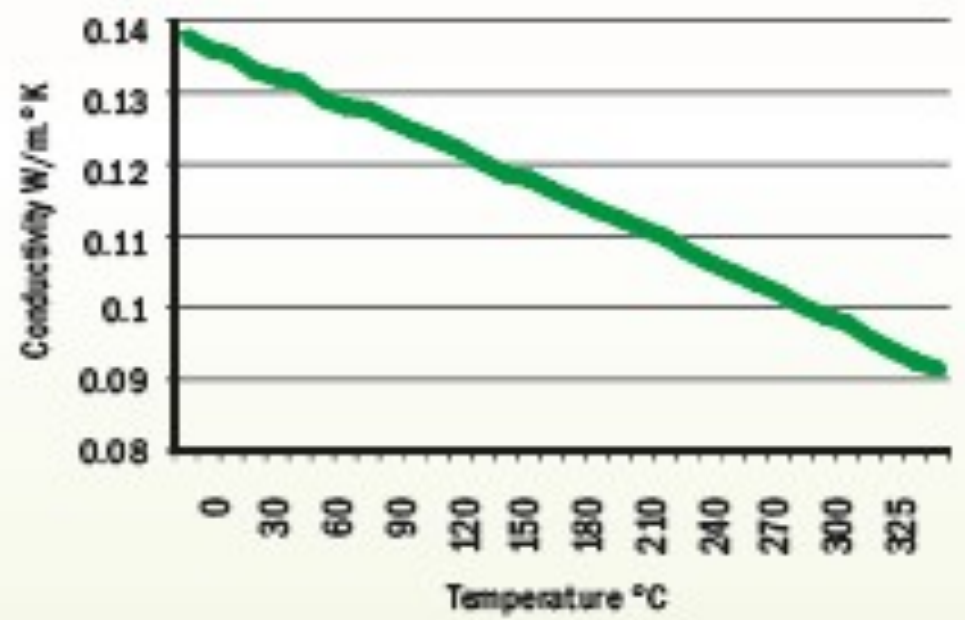
Fluid Density



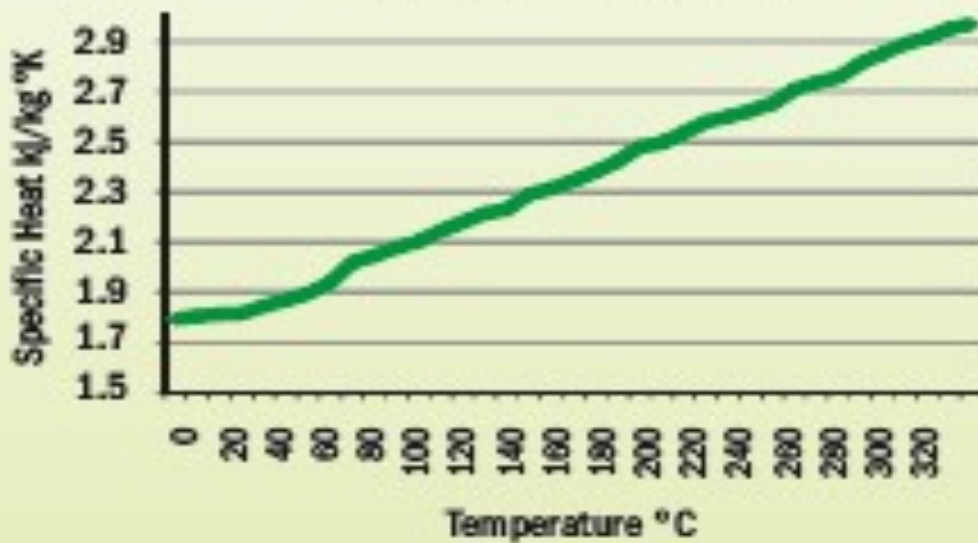
Fluid Viscosity



Fluid Thermal Conductivity



Fluid Specific Heat



THERMAL STABILITY OF THERMIC FLUID :

The thermal stability of a heat transfer thermic fluid is dependent not only on its chemical structure but also on the design and operating temperature profile of the system in which it is used. Maximum life for a thermic fluid can be obtained by following sound engineering practices in the design of the heat transfer system. Three key areas of focus are as follows :

1. Heater Design and Operation: Poor design, mal operational practice and ill-maintenance of Thermopac can cause overheating via film temperature resulting in excessive thermal degradation of the thermic fluid. Some problematic areas to be avoided include:

- Flame impingement (Flame touching the coil).
- Operating the heater above its rated capacity.
- Modifying the fuel-to-air mixing procedure to reduce the flame height and pattern. This can yield higher flame and gas temperatures together with higher heat flux in the shorter flame area.
- Low velocity/high heat flux areas resulting in excessive heat transfer thermic fluid film temperatures.

2. Chemical Contamination: Formation of debris (Organic or inorganic, scales, paraffin waxes, asphaltenes etc.) or corrosion products (Iron oxides, sulphides and Carbonates commonly referred to as black powder) in pipe lines can adversely impact system outputs and increase the energy required to maintain desired rate of heat. The thermal degradation of chemical contaminants may be very rapid which may lead to fouling of heat transfer fluid, surfaces and corrosion of system components.

3. Air Oxidation: Organic heat transfer thermic fluids operated at elevated temperatures are susceptible to air oxidation. The degree of oxidation and the rate of reaction are dependent upon the chemical structure of the heat transfer thermic fluid as well as the temperature and the degree of mixing. Undesirable by-products of this reaction would likely results in system operating problems. Preventive measures should be taken to ensure that air is eliminated from the system prior to bringing the heat transfer thermic fluid up to operating temperatures. Special anti oxidants can control the oxidation in the Thermopac system.

Increase your Thermopac Efficiency with Technology, Innovation and Performance

An Ultimate Thermic Fluid with Synthesized Chemistry to Perform

Hi-Tech Therm Ultra
PREMIUM SYNTHETIC THERMIC FLUID

HEAT STABILITY
HIGH RESISTANCE TO OXIDATION
YES CONTAMINATION OF SURFACES AND NO
SLUDGE CARBON DEPOSIT PROBLEMS

Customer Care
+91-9610848653

OEM APPROVED
Thermic Fluid

PRO ACTIVE SERVICES FOR ALL HT-ULTRA THERMIC FLUID USERS BY GFEL:

- 1. Trouble shooting and operative support :** GFEL offers advice and preventive measures by helping clients analyze the cause of the accident in heat transfer thermic fluid system. We believe our customers can improve system design, operation and system safety, prolong use life of heat transfer thermic fluid and reduce cost by sharing our experience.
- 2. Thermic fluid Analysis:** Generation Four Engitech Ltd Company offers an analytical service for users of HT-ULTRA heat transfer thermic fluid. An inspection plan for awareness of users has been developed under which we will provide a test report of your existing thermic. This analysis is paid for other thermic fluids and free for new customers of HT-ULTRA once in a quarter (up to 2 years), giving a complete report of thermic fluid's present condition, we will detect the contamination or thermal decomposition of the fluid. Our after sales service team will follow up for your testing dates for sample request through phones calls or emails.

Samples should be taken from the main circulating line of a liquid system. Occasionally, additional samples may have to be taken from other parts of the system where specific problems exist. It is recommended that users send a (1 liter) representative sample at least quarterly to our Registered Office at Jodhpur, Rajasthan. Important parameters such as viscosity, Flash point, Carbon Residue, Compatibility and Suspended Particle Contamination are examined on your provided samples.

3. **Thermopac Cleaning** : Due to the formation of debris and corrosion products in pipe lines and various thermal machines like hydraulic presses, dryers, radiators, heat exchangers etc. can adversely impact system outputs and increase the energy required to maintain desired rate of heat.

The system needs the cleaning-

1. If your thermic fluid has a carbon contents more than 2%.
2. If your radiators are not giving proper heat due to carbon and varnish deposition.
3. If your system is above 10-15 years old.
4. If there is heavy carbon formation due to accident in the system.
5. If your machines not taking up the desired temperature.
6. If your system facing pressure & Flow Problems.
7. If you are experiencing Time Delay in Production, due to Malfunctioning of Thermopac.

100% cleaning of your Thermopac system with carbon dispersion, detergent and emulsification process is done with our specialized cleaning product namely **Hitech clean 205/206**. Our experts will update your complete Thermopac system. We provide you not only results but also recommend the solutions with a special cleaning programs at your work station under the supervision of our expert service engineers. Our experts are always available on phone call with remedial solution for removing the system's bottleneck

4. **Heat transfer thermic fluid with System design and equipment selection:** Our rich technocracy and deep experienced knowledge helps in design guide for Thermopac system and its arrangements. The data have been field tested in design guide for Thermopac system and its arrangements. The data have been field tested in numerous installations. We also conduct engineering seminars for customers, engineering firms and equipment manufacturers to share our design and operation experience on heat transfer thermic fluid system.

- 5. Technical support for Start-up of a Heat Transfer Thermic fluid system:** Start-up is the most difficult part of the operation of heat transfer thermic fluid system. We provide start-up assistance by reviewing procedures and making suggestions to reduce typical problems.
- 6. Reconditioning of used heat transfer thermic fluid:** HI-TECH provides a latest innovative approach of oil reconditioning. With an outstanding and excellent method using fluid conditioning resins the utilized thermic fluid can be upgraded up to 90%. We can remove the substances that affect the functional performance and restore the valid components in heat transfer thermic fluid up to optimum limits. Vital fluid parameters are maintained at their optimum condition with the potential to extend fluid life. The expense of purchasing new oil is avoided. Its functional performance can be partly restored. Reconditioning will impact on the following.

- Consistent viscosity and vapor pressure
- Reduced carbon %
- Reduced viscosity
- Filtration of Volatile material.
- Reduces Acidity within standards.
- Increased Bulk Temperature
- Packing with fully Flushed Barrels sealed
- Retaining Properties as almost a new fluid



HI TECH THERM ULTRA

Direct company supply sales to OEMs
HT-ULTRA thermic fluid is available when
and where ever it is required on
just a call or an email.

**Call us for your thermic fluid requirement on
+91-9610848653**

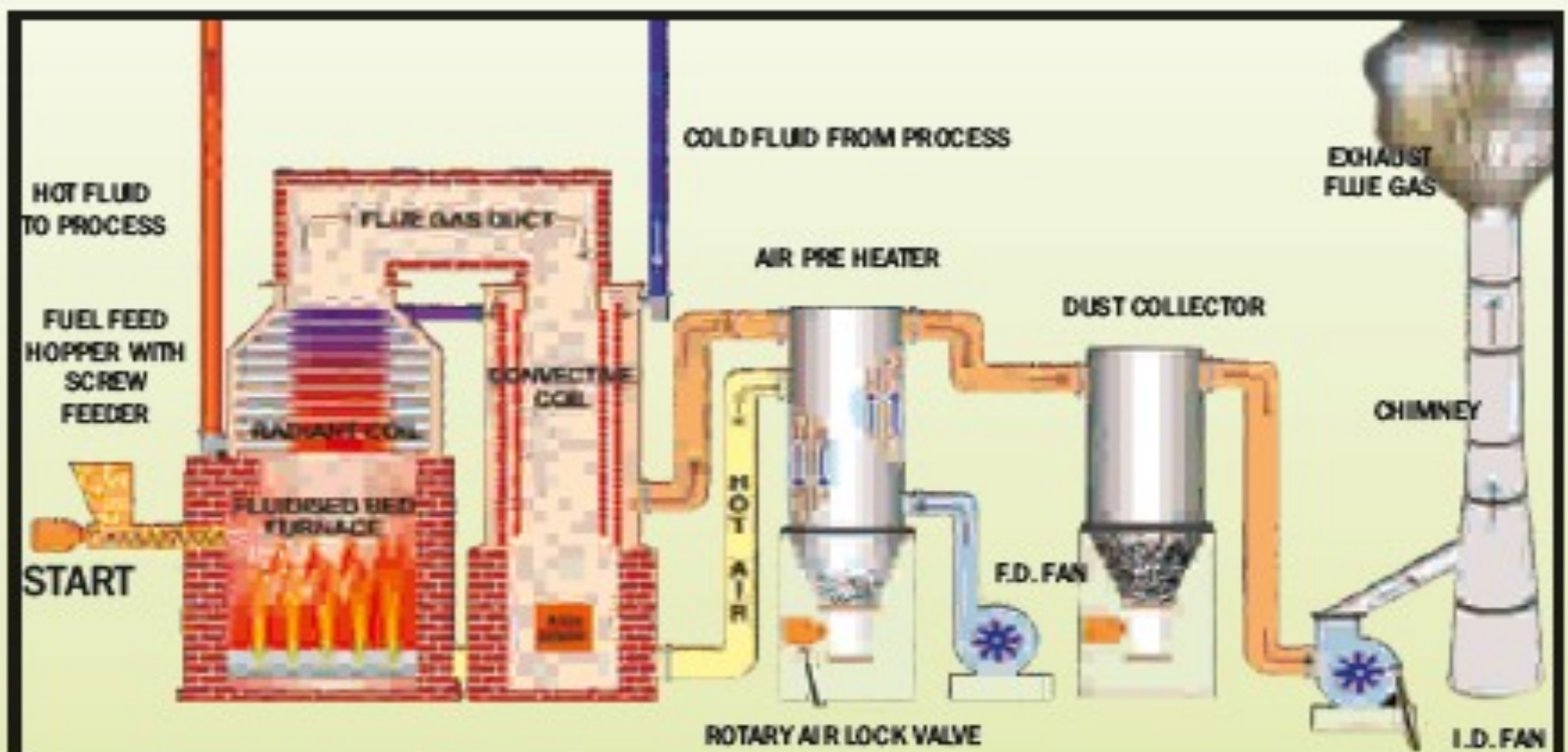
**Also you can send us an email on
sales@hitechultra.com**

**For further information you can also visit on
www.hitechultra.com**



GUIDELINES FOR BETTER RUNNING OF THERMIC FLUID SYSTEM

- Direct contact of flame with heating thermic fluid should be avoided as it leads to overheating and further cracking of thermic fluid.
- Difference between inlet and outlet pressure should be maintained. It should be in a range of 1 -2.5 kg/cm². There should not be any vibrations in pressure gauges. Pressure gauges should be changed or calibrated yearly.
- Difference between inlet and outlet temperature should be maintained. It should be less than 25°C.
- Level of expansion tank should be maintained. At initial level i.e.
- Thermic fluid filling it should be about (25-30 %) and in running condition it should be 70%. Running without level leads to high top ups.
- Temperature of expansion tank should be maintained at <60°C to avoid oxidation. Overheated expansion tank makes the conditions favorable for oxidation and thermic fluid degradation.
- Overflow pipe should be of proper size and overflow tank should be kept clean.
- Half filled barrels shouldn't be kept open.
- Don't shut down the system before 80-90°C. Thermic fluid filling should be done from expansion tank with all air vents open.
- Size of expansion tank should be proper.
- Periodic testing of thermic fluid should be done



Awards and Achievements



An Award for the Product Quality & Knowledge
in Chemical and Petrochemical Sector





Generation Four Engitech Ltd.

An ISO 9001:2008 Certified Company

Proudly Announces the Winning of



AXIS BANK

BUSINESS

Gaurav

SME AWARDS 2012

Under Sector "Chemical and Petrochemicals"
as Best Micro Enterprise in India



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For Maintaining Highest Level of Manufacturing Standard & Manufacturing of High Quality Product
निर्माण में उच्चतम स्तर की गुणवत्ता को अपनाने व श्रेष्ठ गुणवत्ता के प्रॉडक्ट निर्माण के उपलक्ष में



Generation Four Engitech Ltd.

An ISO 9001:2008 Certified Company

have been awarded as

"Manufacturing Business of Year 2011" (M)

" सर्वश्रेष्ठ निर्माण - व्यापारिक प्रतिष्ठान 2011 " (म)



Organised by

Franchise India





Supported by:



Ministry of Micro, Small and Medium Enterprises
Government of India

सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय

Supported by:



National Small Industries Corporation
राष्ट्रीय लघु उद्यम निगम लिमिटेड

Supported by:



Indian Franchise Association

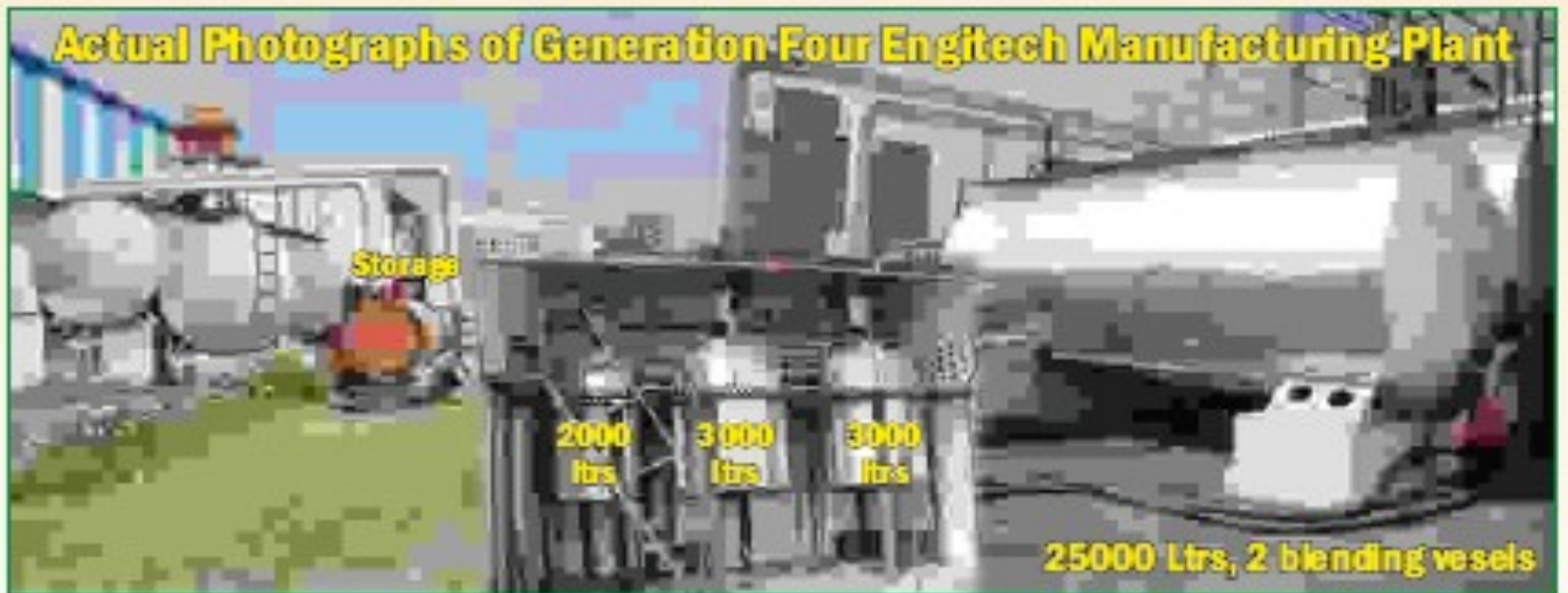
Exchange Partner:



Bombay Stock Exchange
बॉम्बे स्टॉक एक्सचेंज

Our Golden Clients :

 ADANI WILMAR	 AGARWAL FOOD UDAIPUR	 ASHOKA CHEM FOOD	 ASHWIN VANASAPTI VARI	 Bikari Bikaneri BIKARI
 BRINK FOODS	 BUNGE	 COOKWELL FOOD	 DABUR	 GOVERDHAN INDUSTRIES
 JAGANNATH CHEM, NAWA	 JAYANTI AGRO, ALWAR	 JK TYRES	 JOTHY LAB ORATORIES LTD.	 KANDLA ENERGY AND CHEMICALS LTD.
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 MARUTI TEXTILES	 MAYUR UNIQUOTERS LTD.	 METRO PLYWOOD PVT. LTD.	 SILICON	 MOTHERLAND GARMENTS
 MOTIF DECOR	 PANKAJAT INDUSTRIES, NAWA	 PARAS VANASPATI PVT. LTD. RAIPUR	 PAWAN AGRO INDUSTRIES	 PIDILITE
 PURTI GROUP	 RACHNA PLASTICIZERS	 RISHABH RESINS	 RUCHI SOYA LTD.	 SK OIL INDUSTRIES
 SIR RECLAMATIONS PVT. LTD.	 SABOO SODIUM	 SAHIB SYNTHETICS	 SHREE NAMAK	 SOMI CONVEYOR BELT
 SUPER FLOORINGS	 TEX CORP DELHI	 TIPCO	 VE COMMERCIAL VEHICLES LTD.	 VIJAY SOUVEX LTD
 VOLTAMP TRANSFORMERS LIMITED	 YETI POLYCHEM, NEPAL	 MARUDHAR PAINTS	 HONTEK AGRO INDIA	 AGRO TEC FOOD LTD.



“The secret of change is to focus all of your energy not on fighting the old but on building the new.”

-Socrates

We, offer technical support & assistance with our product, to the users of Thermic fluids. Our expert-team always feels pleasure in solving your problems regarding Heat Transfer System and that of the thermic fluid. Our engineers reach on call to undertake cleaning of heat transfer system which has already clogged, giving very poor performance. Our engineers provide scientific cleaning to make it worth of giving well out-turn again.

Represented by:

Person's Signature and Name

GENERATION FOUR ENGITECH LIMITED


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 : +91-9214048652

 **Collaboration With :** Source Explore Ltd, St Box No. 91642,
Nathan Road, TSIM SHATSUI, Hongkong.

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