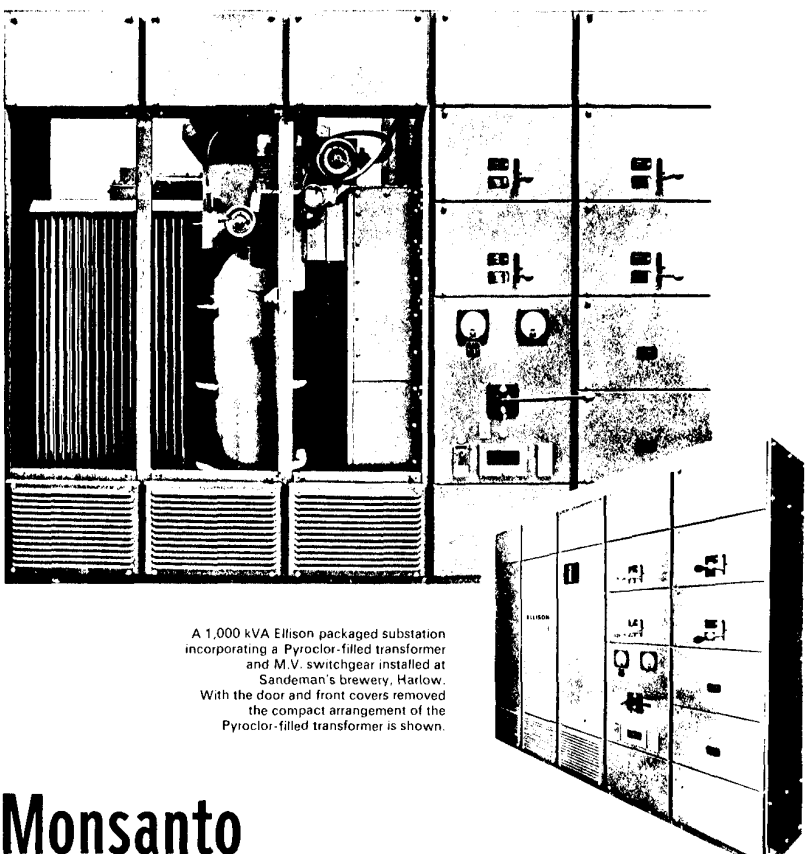
MONSANTO EUROPE S.A.
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BRUXELLES 3

Here's how to get more performance and save money when specifying transformers



A 1,000 kVA Ellison packaged substation incorporating a Pyroclor-filled transformer and M.V. switchgear installed at Sandeman's brewery, Harlow. With the door and front covers removed the compact arrangement of the Pyroclor-filled transformer is shown.

Monsanto

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PYROCLOR

the fire-resistant dielectric preferred by engineers who want to save money now and for years to come

Pyroclor-filled fire-resistant transformers offer...

Lower Operating Costs
due to lower power losses

High Impulse Strength
giving a margin of safety against transformer failure

No Maintenance Costs
install and leave them alone

Low Installation Costs
place them where YOU want them placed

Fire Resistance
Pyroclor *provides* safety

Quietness
designed to be quieter than open dry types

Reliability
more than 30 years of trouble-free operation

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Why Pyroclor ?

* Pyroclor is the trade mark for Monsanto's transformer askarel fluid. Askarel is a generic term for a group of fire-resistant synthetic materials used as electrical insulating media.

For almost 40 years Pyroclor-filled transformers have served the commercial and industrial fields faithfully with safety, economy and reliability. They are built to exact specifications by all major electrical equipment manufacturers in the United Kingdom.

Mineral oil transformers can catch fire. Therefore when used in confined or populated areas, they require fire walls, vaults, and sprinkler systems. Alternatively they must be located at a more remote point requiring long expensive medium voltage cables.

Open dry type transformers are limited in flexibility of location. Supplemental installation costs usually run much higher than with Pyroclor-filled units, especially if sound-deadening or enclosure from atmospheric contamination and moisture is required. They are less dependable than Pyroclor-filled units because they are affected by corrosive atmospheric conditions. Due to the nature of open dry type units, they often require a great deal of maintenance. They also have a high noise level and are expensive to operate because of higher load losses and frequent maintenance requirements.

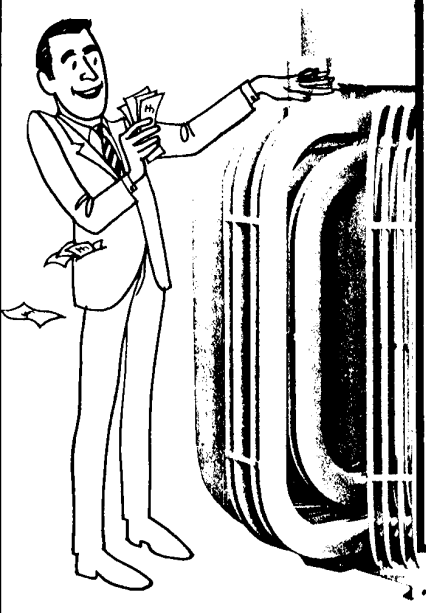
Pyroclor-filled units deliver a steady power flow year after year, offering lower operating and maintenance costs, quietness and dependability. They are fire-resistant and allow you to place them where YOU want them placed, right at the point of use if you choose. Substantial savings can be made in installation alone!

Pyroclor will not oxidise or sludge; remains chemically stable when subjected to elevated temperatures and will not corrode metals.

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Pyroclor-filled fire-resistant transformers are less expensive to operate than open dry types due to the lower core and coil losses

It's just like getting a free transformer in about 10 years!



TYPICAL EXAMPLE

1500 kVA, 3 phase, 50 Hz, 11,000/415V
100% load factor

Unit	*Core Loss*	*Coil Loss*
Class C	3,480	18,500
Pyroclor	2,400	16,000

75% load factor . . . coil losses are approximately as follows:

Class C . . . . 18,500 x $(.75)^2$ = 10,400 watts
Pyroclor . . . 16,000 x $(.75)^2$ = 9,000 watts
∴ Coil loss difference = 1,400 watts

Total core and coil loss difference in favour of Pyroclor.....2,480 watts

Based on an 8,700 hour year operation
2,480 x 8,700 = 21,576 kWh

Assume power costs 1.5d/kWh then the saving per year will be £90 or the Pyroclor transformer is paid for in about 10 years.*

*This saving compounded at 10% p.a.

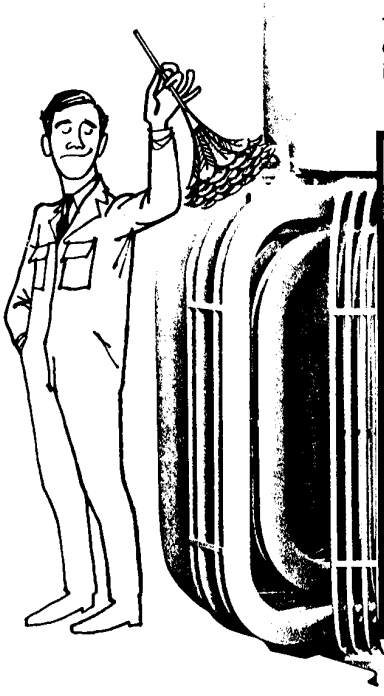
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Pyroclor-filled fire-resistant transformers offer easy maintenance

Low maintenance means greater savings in time and money!

Pyroclor-filled transformers are easiest to maintain. Proper sealing of modern Pyroclor transformers has banished the threat of water contamination, the arch enemy of all transformers. No need for periodical shut-down of the system for cleaning . . . the Pyroclor fluid is sealed against moisture and atmospheric contamination. There are no exposed coil cores to gather dust and lint that must be periodically cleaned. You install them and leave them alone.



TRANSFORMER MAINTENANCE

Type	*Work Required*	*Frequency*
OPEN DRY TYPE	Regular cleaning of air gaps and air ways	Depending on environment but at least once annually
OIL FILLED Cyclic Loading	Oil Filtration Oil Change Sample Check	Every 7 years Every 14 years Every year
OIL FILLED Continuous Loading	Oil Filtration Oil Change Sample Check	Every 4 years Every 8 years Every year
PYROCLOR-FILLED Sealed Transformer	Keep dry.....	Then leave alone

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Pyroclor-filled fire-resistant transformers can give you lower installation costs

Place the Pyroclor-filled transformer where and when you want it placed!

Because of the unique features of Pyroclor-filled transformers you can place them where and when *you* want them placed . . . right at the point of power usage. You do not have to wait until other phases of construction are completed. No added expenses are necessary to protect the transformer from contamination, subdue the sound level or run expensive cables from distant locations. You place it where your system dictates, not where the transformer dictates.

The start-up costs for Pyroclor-filled transformers are almost nil, because they are sealed there is no expensive clean-up and drying out required prior to starting. Just bring them in, connect them up and start operating. This alone offers big savings.

Pyroclor-filled transformers offer fire safety

Pyroclor fluids are fire-resistant!

The fluid is fire-resistant and does not support combustion. Just as important, the fluid will not carry or add burning oil hazards to fires which may start from other causes. The liquid does not deteriorate when exposed to heat or hot metal; it does not decompose over long periods of time.

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Pyroclor-filled fire-resistant transformers are quieter

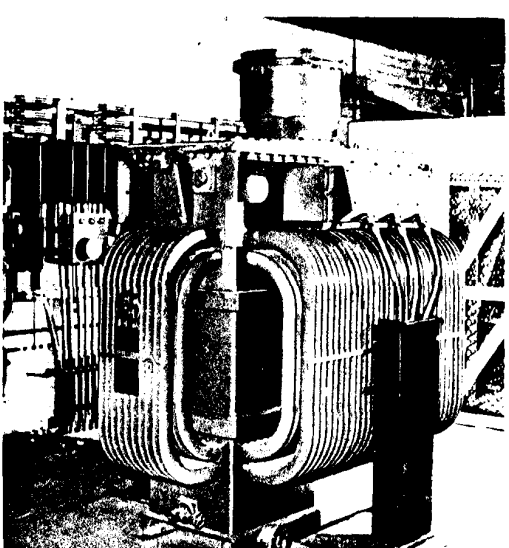
Check the standards!

Wherever sound level is a factor, Pyroclor-filled transformers give five to seven decibels noise reduction as compared with open dry-type units.

Pyroclor-filled fire-resistant transformers are reliable

Over 30 years of trouble-free operation!

A properly designed and installed Pyroclor-filled transformer will give long years of trouble-free service, many have been in operation for over 30 years . . . proven in installations throughout the world.



This 1,000 kVA Pyroclor-filled transformer was installed in the basement of the Birmingham Civic Centre in 1936 and is still operating satisfactorily with the original fluid charge.

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Arcing in Pyroclor does NOT...

Five independent series of research from three different countries, both theoretically and in practice, prove that it is impossible to derive phosgene or chlorine from the arcing of Pyroclor. Under major fault conditions of arcing hydrogen chloride gas can be evolved. Where appropriate or necessary, standard techniques or devices for venting are available from transformer makers.

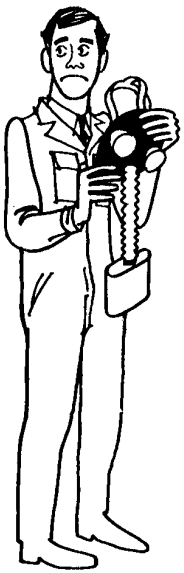
The most significant and reliable measurement of Pyroclor's electrical performance is its dielectric strength. Pyroclor will maintain its high dielectric strength unless there is a significant amount of moisture contamination present.

Pyroclor is manufactured by Monsanto in the United Kingdom.

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produce phosgene or chlorine gases!!



Operating with Pyroclor-filled fire-resistant transformers is the safest, easiest and often the least expensive way to distribute electrical power. Your transformer manufacturer can give you the complete story on their Pyroclor-filled transformers. Be sure to ask him soon... specifying Pyroclor-filled transformers is your best safeguard when your plans call for transformer equipment in...

Industrial Substations and Load Centres . . . in factory areas where maximum safety from fire is required and where atmospheric contamination may exist.

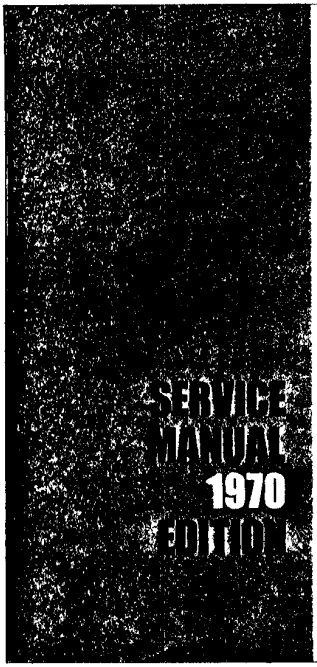
Area Board Networks . . . where safety and space is a consideration.

Institutions and Office Buildings . . . schools, hospitals, hotels, shopping centres, multi-storey flats etc. where maximum safety, low noise levels and space are prime factors.

In any electrical system . . . where you are charged with the responsibility of providing the best installation available at the lowest overall installation and operational cost.

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PYROCLOR

TRANSFORMER COOLANT BY **Monsanto**

Send for detailed information

Monsanto will be happy to supply you with a copy of the latest Pyroclor-filled Transformer Service Manual. Ask your transformer manufacturer to get your copy for you or simply return the attached Business Reply Card.

Pyroclor-filled transformers are manufactured by all the major transformer companies in the United Kingdom.

Specify Pyroclor for your next job!

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☐ **Please send the Pyroclor Service Manual**

☐ **Would you like your name to be put on our mailing list?**

☐ **Would you like our salesman to call?**

Name _____

Title _____

Company _____

Address _____

_____

Telephone No. _____ 0025929

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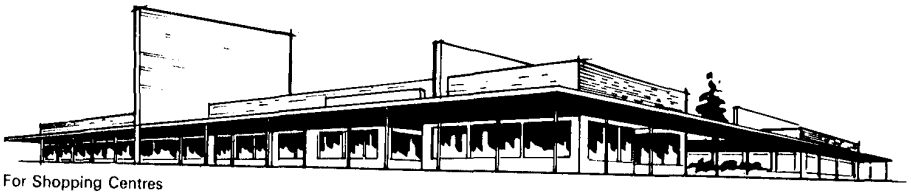
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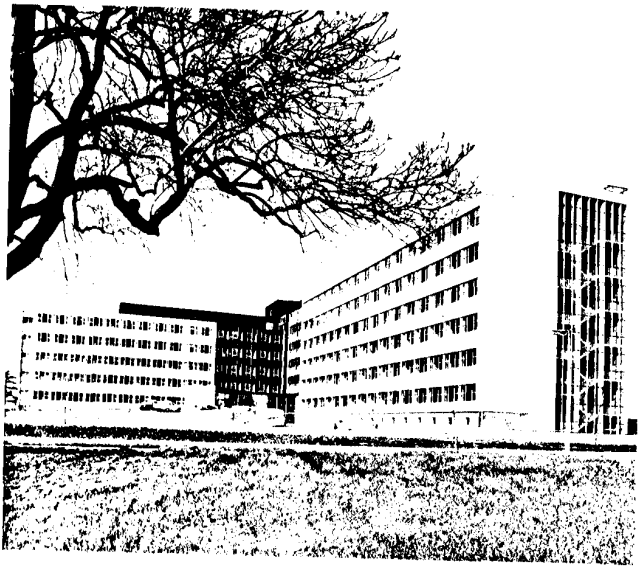
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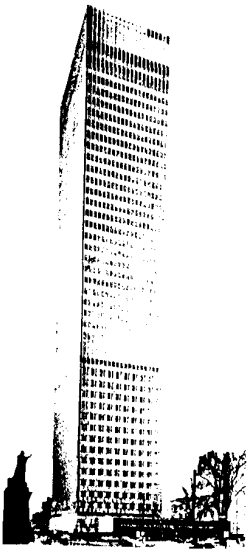
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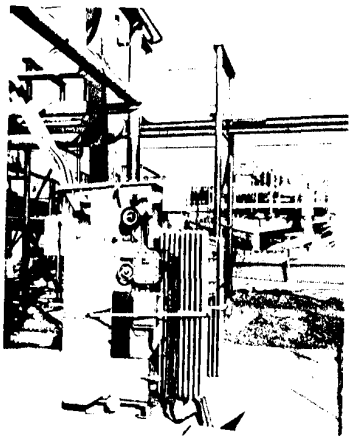
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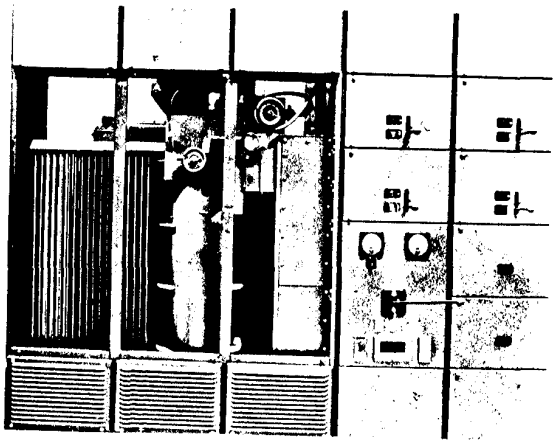


For Hospitals



For Multi-storey Buildings





For Industrial Load Centres

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Regd

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