VAPOROL
COMBINED VPI (VAPOUR PHASE INHIBITOR)
AND CONTACT INHIBITOR OIL

clean, simple, quick, cost-effective

protects the INSIDE of things from corrosion

VAPOR-TEK
A unique formulation that gets to the very heart of the problem of corrosion in unseen areas

How Vaporol works - the inside story

This is illustrated by the preservation of a fuel tank, represented diagrammatically below:

With ordinary preservative oils, all surfaces have to be completely coated.

This is often difficult and sometimes impossible. Even when possible the oil will slowly drain away from surfaces with consequent loss of protection. Vaporol has only to be present in the tank (or any enclosed system) - the vapours do the rest. With more complex structures such as engines, gearboxes, etc., this means that the awkward and difficult-to-reach nooks and crannies can easily be protected.

Benefits of using Vaporol

LOW COST - A little goes a long way. Also, since application is generally quick and simple, the time and labour saving can often more than offset the entire cost of the material.

EFFECTIVE - Many years of experience with Vaporol has proved that it is a reliable, fast acting (a matter of minutes) and long lasting (years in many cases) means of protecting internal surfaces and mechanisms.

ENVIRONMENTAL CONSIDERATIONS - Vaporol is nitrite free and does not contain volatile solvents or other volatile organic compounds (VOC's) damaging to the environment. No chlorinated substances or heavy metals are present.

COMPATIBILITY IF VAPOROL WITH FUELS & OILS - Vaporol is compatible with petrol, diesel, fuel oils and most lubricants. Therefore there is generally no need to remove the Vaporol when equipment is put into service. This both saves time and allows equipment to be available for instant use - clearly important in the case of such items as military vehicles, rescue equipment, stand-by generators, seasonal equipment (including marine), etc.

Some synthetic oils, especially those based on polyglycols, may not be compatible - if any doubt exists, please consult us as we can usually formulate special products to meet specific requirements.
For example, **VAPOROL** will protect the inside of these.....

- Engines & Gearboxes
- Fuel Tanks
- Inside Pipes & Tubes
- Axle Assemblies
- Export Packaging
- Pumps, Compressors & Hydraulic Systems
- Laid-Up - but ready to go!

.....or any enclosed area
VAPOROL
COMBINED VPI AND CONTACT INHIBITOR OIL

GUIDANCE NOTES - Vaporol works only in those areas which can be sufficiently enclosed to allow the vapours to build-up to a working concentration. However, unlike when desiccants are used, protected areas need not be sealed. As long as they are sufficiently enclosed to prevent undue loss of vapour, protection will continue, since Vaporol contains a massive back-up of inhibitor (over a million times its own volume). Typical examples of suitably enclosed areas are shown on the inside of this literature.

Most importantly, it is not essential that metal surfaces be coated with Vaporol: the vapours will do that. However, in those cases where it is possible to conveniently coat surfaces, the contact inhibitors in Vaporol come into play to give extra protection. (Examples include large diameter pipework, small tanks which can be filled and then drained, parts which can be dipped or otherwise coated prior to packing - and so on).

The amount of Vaporol needed will vary with the circumstances such as the nature of the metal surface, length of protection required, storage conditions, etc. As a general guide, 0.5 - 1.0 ml per litre of space (0.5 - 1.0 litres per cubic metre) to be protected would be average. If fuel or oil is present, an additional 2 - 5% of Vaporol (based on the amount of fuel or oil) should be added.

EFFECTS ON NON-FERROUS METALS AND NON-METALS - Vaporol, in both the liquid and vapour phases, affords positive protection to ferrous metals, tin, aluminium and nickel. Some metals and alloys are affected by the vapours of Vaporol. These include copper and some of its alloys, zinc, cadmium and lead. The effect is generally cosmetic only and confined to the surface, e.g. slight discolouration.

Vaporol behaves towards non-metals (rubbers, paints, plastics, etc.) in a manner similar to other mineral oils.

If in doubt, carry out appropriate checks and consult Vapor-Tek Ltd.

AVAILABLE IN CONCENTRATE FORM - Vaporol is also available as a concentrate. This is mainly intended for customers who wish to use it as an additive to up-grade lubricating or protective oils to embody vapour-phase inhibitor properties.

HEALTH & SAFETY - Vaporol contains a highly refined mineral oil and is therefore classed as 'combustible' and should be treated accordingly. Fires or spillages should be dealt with in the same manner as for mineral oil. Vaporol does not contain nitrites, heavy metals, solvents or other harmful or toxic materials. However, as with all oil-based products, prolonged or repeated skin contact should be avoided and appropriate protective clothing worn where necessary. Avoid inhalation of spray. More detailed information is available on request, consult safety data sheet.

TECHNICAL SERVICE - All Vapor-Tek products are backed by comprehensive technical and laboratory services, including research and test facilities. Qualified staff are on hand to discuss the use of Vapor-Tek products and to advise on general problems of corrosion.

OTHER VAPOR-TEK PRODUCTS - A comprehensive range of corrosion preventives for use in storage, transit and export situations. It includes Ultra-thin film protectives, Touch-dry films for better handling, Oily films for lubrication and penetration, Acid fume resistant coatings, Protective greases (including a vapour-phase inhibitor grade), Water-based combined contact and vapour-phase inhibitors, Vapour-phase inhibitor paper, VOC-free protectives, etc. In addition special products to meet specific needs can be formulated and manufactured. Do not hesitate to contact Vapor-Tek to discuss your problems and requirements.

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VAPOROL VAPOUR-PHASE (VOLATILE) CORROSION PREVENTIVE OIL

FREQUENTLY ASKED QUESTIONS

* What is the dosage rate?

To begin with, work on one litre per cubic metre of space to be protected (0.1% by volume). If fuel, lubricating or hydraulic oil is present, e.g. in fuel tanks, hydraulic systems, engines, etc., add an exta 5% Vaporol based on the volume of the oil or fuel.

* Do protected spaces need to be completely sealed?

No. It is necessary only that the space should be 'enclosed' to minimise loss of protective vapour. Examples of an 'enclosed' area would be a fuel tank (with the cap on), engine cylinders and crankcases, axle housings, packing cases and similar.

You should note that, although the vapour phase inhibitor is volatile - that is how it works - its volatility or vapour pressure is very low. It is many orders of magnitude less than that of familiar volatile substances such as water, petrol or white (mineral) spirit. A comparison with camphor, naphthalene, oil of wintergreen or pine oil would be more appropriate.

* How long does the protection last?

This will depend on the conditions and degree of enclosure. To give guidelines: engines have been found to be corrosion free after five years of storage, and in laboratory tests, mild steel test pieces are still in perfect condition after ten years at 100% relative humidity.

* How is Vaporol applied?

This depends on the circumstances. For example, Vaporol is best sprayed or fogged into voids such as fuel or storage tanks. Although it is not necessary to coat all the internal surfaces, it is advisable to distribute the protective oil throughout the tank in such a way that areas that do not receive a coating are as close as possible to areas which have been coated. In this way the vapours will quickly diffuse from the coated to the uncoated areas to give protection. Best results are achieved with complete surface coverage since Vaporol contains 'contact' inhibitors as well as vapour-phase inhibitors.

* Does Vaporol leave a residue when burned?

No. Vaporol is ashless in combustion. This means that there is no need to remove Vaporol from the inside of engines or fuel tanks when the items are put into service or returned into service in the case of items laid up for periods.
* Is Vaporol compatible with other oils?

Generally yes. Mineral oils, vegetable oils and most synthetics are compatible. Some specialty oils such as silicones, fluorocarbons or glycols may be incompatible and should be tested.

* What effect does Vaporol have on non-ferrous metals?

Vaporol gives positive protection to aluminium and is neutral to most non-ferrous metals. However, Vaporol vapours can cause discoloration on copper, brasses, bronzes and zinc. The effect is generally cosmetic only and does not cause structural damage. Consult Vapor-Tek and/or carry out suitable tests if there is a suspected problem.

* What effect does Vaporol have on non-metals?

As a general rule, rubbers, plastics, polymers, paints etc., which are classed as oil or solvent resistant, will be unaffected by Vaporol. If there is any doubt, appropriate tests (usually by the supplier of the non-metal item) should be carried out. Hydrocarbon rubbers such as natural rubber, SBR, EPDM, Buna and butyl rubber should be avoided.

* Can Vaporol be used in conjunction with desiccants?

Yes. Many export packers use both to preserve parts for deep sea transportation.

* Are there any hazards associated with Vaporol?

Vaporol is not classed as hazardous for use or transportation. However, users should study the 'Health and Safety Data Sheet' carefully. All materials can be potentially hazardous - there are only non-hazardous ways of using them.

* What is the storage life of Vaporol?

When stored in closed, preferably steel, containers - for example as received from Vapor-Tek - the storage or 'shelf-life' under normal conditions of storage is essentially indefinite.

* Does Vaporol conform to any specifications?

Yes. It meets the requirements of US specifications MIL-P-46002A (MR) and MIL-I-23310A (AS). However, it has not actually been officially approved since it has not been submitted to the US authorities. Also, it has been tested according to Federal Test No. 101C, Method 4031 which it passes with ease.