PETROFER
industrial oils and chemicals

PRODUCT INFORMATON

MARQUENCH 1400

Application:

In former times only salt baths had been used for martempering (hot-quenching) operations. With the development of sealed furnaces (batch-type and pusher as well as pit-furnaces) the application of quenching salt baths became more and more limited. Salt residues which will unavoidably be carried with the racks and baskets into the furnaces, can destroy ceramic material as well as heat-resistant steel and may influence the carburizing atmosphere.

Replacing salt baths with quenching oils, which were applied in the normal temperature range, sometimes led to undesirable distortion.

The first oil baths which were employed at hot-quenching temperatures had poor quenching properties and low aging stability.

In the early 70s the MARQUENCH oils were developed in Hildesheim by
our company for application especially in the above described furnaces. They guarantee optimal aging stability as well as the required quenching properties.

MARQUCHCH 1400 is special designed for high temperature quenching process. The maximum temperature is up to 250℃ and the suitable temperature range is 150～230℃.

Typical applications for MARQUENCH 1400 are quenching of:
gears and shafts
spheroidal graphite cast iron and bearing

Chemical and physical data:

Density at 20℃	0.885
Viscosity at 40℃	240 mm^2/s (cSt)
Flash point	≥280℃
Fire point	≥298℃

Quenching properties:

The extremely short vapor phase in combination with the evaporation stability guarantee for the single part as well as for a batch a very uniform and rapid cooling of the whole workpiece surface.

For a gear e.g. this means the most minimal temperature differences between tooth-tip and tooth-ground, all flanks are cooled practically at the same time which avoids unnecessary thermal stresses.

The low quenching rate at the end (in the temperature range of martensitic transformation) reduces thermal stresses even more.

Aging stability and service life:

MARQUENCH 1400 has an extraordinarily good aging stability and provides long service life. The volume of the bath should be in a proper

relation to the weight of the quenched work. For open baths the minimum ratio is 10:1, for sealed furnaces the ratio 7:1 is recommended; referring to the gross weight of one batch or the amount of quenched work per hour.

Heat exchangers should not provide a strain of more than 1 W/cm^2.

Do not use copper for the cooling components or other attachments in the bath, because copper accelerates the aging speed of mineral oil products significantly.

Avoid incorporation of air by a too vehement agitation.

Cleaning of work-pieces after quenching
Furnaces as described above, in which MARQUENCH 1400 is mostly applied, are usually equipped with washing machines.

Residues from MARQUENCH 1400 can be removed in soaking or spray washing machines with aqueous hot cleaners (e.g. FEROCLEAN N-SF). It can also be removed with all kinds of solvents.

If the MARQUENCH 1400 E-version is applied, it can be washed off with pure water. Ask for special information on E-quenching oils.

Only valid in combination with EC-Safety-Data-Sheet.