

RECO-COOL

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RECOMMENDATIONS FOR USE OF COOLANTS IN STATIONARY (GENERATOR SET) ENGINES AND EQUIPMENT

Most stationary engines including those found in power generation, gas and power industries, wind turbine industries and pipeline industries, have compression systems which also require coolant fluid.

The technical requirements of the coolant have very much in common with heavy duty on-road and off-road cooling system requirements, found in standard mobile plant equipment.

These areas of commonality include:

- a) The metallurgy of the cooling systems is often very similar, and therefore the inhibitor chemistries required to prevent corrosion is often very similar
- b) The operating temperature of the equipment is often very similar (operating typically between 92°C and 104°C.)
- c) The fuel type is often very similar – many stationary engines also run on diesoline fuel, although this is not always the case. Some gas pipeline stationary equipment uses CNG and other types of compressed gases. The only variation that this causes typically is a minor variation in the operating temperature, and possibly some changes to the metallurgy to compensate for the higher temperature operation
- d) The seals and elastomers used in these systems are very similar and have the same sort of compatibility requirements.

There are some noted areas of difference as well:-

- a) Because these units are stationary, they are often placed indoors on concrete slabs – therefore there is an absence typically of dirt or dust
- b) The units typically run several hours per day non-stop (up to 24 hours daily).
- c) They are typically therefore less exposed to wider temperature fluctuation (especially against cold weather – in cold climates they are typically insulated, or operate 24 hours daily). This means that the need for “antifreeze performance” is reduced)



As a result of this, the use of waterbased coolants is a commonly established trend in the cooling systems of stationary equipment. Being waterbased, these coolants typically are lower cost than automotive and mobile plant coolants (through the reduction of MEG – monoethylene glycol – in the formulation of the fluid). However, it is important to understand that the corrosion inhibition performance is still critical.

The use of plain tap water in these applications should always be avoided.

Waterbased coolants must contain sufficient corrosion inhibitors to prevent corrosion against the most common metal elements, include Iron (Fe), Aluminium (Al), Copper (Cu), Zinc, (Zn), Tin (Sn), Lead (Pb), Solder and Brass.

In evaluating appropriate cooling fluids, it is important that the coolant meets the fundamental corrosion inhibitor performance levels ASTM D 1384, ASTM D 2570, ASTM D 4340 and ASTM D 2809.

In addition, several OEMs (Original Equipment Manufacturers) maintain their own individual approval specifications for coolant system fluids. Usually, these OEMs make reference to the above ASTM tests, or modified versions of them.

Recochem has a range of coolant fluids which are suitable for these types of stationary engines.

