

# ALIEN PROPERTY CUSTODIAN

## ANTI-FREEZING COMPOSITION

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in the Alien Property Custodian

No Drawing. Application filed April 21, 1942

As is known, commonly used anti-freezing compositions are constituted by solutions of calcium chloride, magnesium chloride or zinc chloride. Such known compositions have the disadvantages of attacking white metals and of quickly corroding ferrous metals.

An object of the present invention is to provide as a new composition of matter an improved anti-freezing composition devoid of the aforesaid disadvantages and ensuring adequate protection against freezing even in the case of very bitter frosts such as are commonly encountered in most inhabited countries of the world.

Another object of the invention is to provide a method of producing the foregoing improved composition with particularly good anti-freezing characteristics by simple means.

The anti-freezing composition according to the invention may comprise by way of example a solution of sodium nitrite or potassium nitrite or a mixture of these two nitrites in water or an equivalent aqueous or other solvent.

An anti-freezing composition thus constituted neither attacks nor bites alloys comprising aluminum, zinc or copper and protects ferrous metals against corrosion or the formation of rust while efficaciously withstanding very high frosts without becoming congealed. It can be verified that

the freezing point of an aqueous solution of sodium nitrite is as low as  $-27^{\circ}$  C. while the freezing point of an aqueous solution of potassium nitrite is  $-31^{\circ}$  C.

5 These freezing points are low enough to render anti-freezing compositions according to the invention suitable for most practical uses as for example in automobile radiators or in water containers liable to remain exposed to frost action during any prolonged period of time.

10 A suitable method of preparing a particularly efficient anti-freezing composition made up of a mixture of potassium and sodium nitrites consists in dissolving sodium nitrite in water at an approximate temperature of  $15^{\circ}$  C. until saturation is reached, then using this solution as a solvent for such a quantity of potassium nitrite as to again reach saturation. A composition thus obtained will not set into solid form under frost action unless it is subjected to a temperature equal to or lower than  $-40^{\circ}$  C.

15 20 25 By lessening the proportions of sodium and potassium nitrites, compositions can be obtained which while not being so resistant to very heavy frost are still usefully utilisable for a wide range of practical applications.

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