

THE ROLE OF INHIBITORS IN SOLUTION OF ECOLOGICAL PROBLEMS OF OIL INDUSTRY

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One of the main reasons forming ecological tension in oil industry is accidents occurring because of corrosion in intrafield accumulation and transport lines of oil and water-injection pumping stations. In this case the oil produced and oil-field waters with high extent of mineralization composed of heavy metals, as well as cadmium spill around. And this causes serious changes in flora and fauna in that area. The danger of mass abolition of living beings increases. Toxic and cancerogenic components accumulated in the animals feeding on green weight forming in the area where oil composing toxic and cancerogenic substances and oil-polluted oil-field waters flow in lead to generation of several illnesses in living beings which use them as food later.

The above-mentioned facts show that solution of these problems still remains as an actual one and it may be efficient to design and apply multifunctional corrosion inhibitors to prevent them. Corrosion inhibitors used in such systems should prevent corrosion, at the same time. Salt settling and cease life activity of sulfate-reducing bacteria. In this case several problems can be

solved together. No accidents occur in water-injection pumping stations and no aggressive oil-field waters spill around. As sulfate-reducing bacteria can't progress in layer, no biomass holding layer pores generate and water-retaining structure of layer remains constant which increases coefficient of efficiency of the system.

Because of corrosion and salt settling in oil-producing wells and transport pipelines no accidents occur and no oil-water emulsion spills around. The mentioned problem is urgent for all oil-producing countries, as well as Azerbaijan. The seriousness of this problem for Azerbaijan is connected with off-shore location of main oil fields.

In order to solve this problem we have synthesized inorganic complexes of nitrogen derivatives of petroleum acids which are by-products of Oil Refinery named after H. Aliyev and studied their inhibitor-bactericide properties. It has been revealed that effective densities may vary depending on the character of inorganic anion and the number of anions composing a molecule.

The most efficient complex involving Cl^- , J^- , Br^- , NO_3^- , H_2PO_4^- anions is a complex involving one phosphate anion. This complex ceases life activity of sulfate-reducing bacteria completely in ≥ 25 mg/l densities.

The complexes involving 2 Cl^- anion in their molecule among the obtained molecules have maximum protective effect in liquid medium composed of 1% NaCl and saturated by CO_2 in 50 mg/l densities.

Comparative analysis of inhibitor-bactericide properties of the synthesized complexes were given in the given report.

№	Name of reagent	Concentration	Incubation period of SRB (round the clock)														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	In 1:2 proportion of imidazoline of M-54. isovaleric acid with HCl in isopropyl alcohol	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10	-	↓	↓	↓	+	+	+	+	+	+	+	+	+	+	+
		5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	In 1:1 proportion of imidazoline of M-74. hexane acid with H_3PO_4 in water+isopropyl alcohol	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5	-	-	-	-	-	-	-	↓	↓	↓	↓	↓	↓	+	+
3	In 1:1 proportion of imidazoline of M-75. hexane acid with H_3PO_4 in isopropyl alcohol	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-