Ti Application Note No. T- 29

Title:	**Alkyllead (anti-knock agent) in petrol (gasoline)**

***Summary*:**	Determination of alkyllead compounds in petrol (gasoline) after reaction with iodine monochloride by potentiometric titration with EDTA using the Cu ISE.

Sample:	Leaded petrol (gasoline)

Sample Preparation:	Transfer 50 mL of iodine monochloride reagent and 25 mL heavy distillate to a 250 mL separating funnel then add 25.0 mL sample. Stopper the funnel and shake for 60 s. When the two phases have separated, run the lower aqueous phase into an Erlenmeyer flask. Wash the organic phase with three separate 20 mL portions of dist. water and add the washings to the Erlenmeyer flask. Place several glass beads into the flask, heat the solution and boil until the volume is ca. 15 ... 20 mL. Add 5 mL conc. HNO_3 and evaporate to dryness. Dissolve the residue by adding 50 mL dist. water and heating. Allow the solution to cool before starting the titration.

Instruments and Accessories:	702, 716 or 736 Titrino or 726 Titroprocessor, 6.0502.140 Cu ISE and 6.0726.100 reference electrode

Analysis:	Add 1 mL acetate buffer pH = 4.6 (0.5 mol/L acetic acid + 0.5 mol/L Na acetate) and 0.1 mL CuEDTA to the prepared sample solution, then titrate with c(EDTA) = 0.005 mol/L using the MET mode.

Calculation:	1 mL c(EDTA) = 0.005 mol/L corresponds to 1.036 mg Pb.

Remarks:	The temperature of the sample has to be taken into account. For this as well as the preparation/standardisation of the reagents please see ASTM D 3341-91.