

THE EVOLUTION OF ASTM D4929:



ASTM D4929C Gaining Traction

ASTM D4929, organic chlorides in crude by distillation and naphtha analysis, was first published with two procedures:

- Procedure A (D4929A) sodium biphenyl reduction followed by potentiometric titration.
- Procedure B (D4929B) oxidative combustion followed by microcoulometric titration.

Both procedures require users to first distill a crude oil sample to 400°F, wash the resulting naphtha fraction by caustic to remove H₂S and then water to remove inorganic chlorides, and then use Procedure A or Procedure B to determine chloride content. Chloride content of the crude is then determined by back calculation. These are not typically considered easy nor fast procedures.

Then on October 15, 2017, ASTM approved the addition of **Procedure C** to D4929 Standard Test Method for Determination of Organic Chloride Content in Crude Oil, which uses X-ray Fluorescence (XRF) – a **precise, easy and fast alternative** to Procedures A and B*.

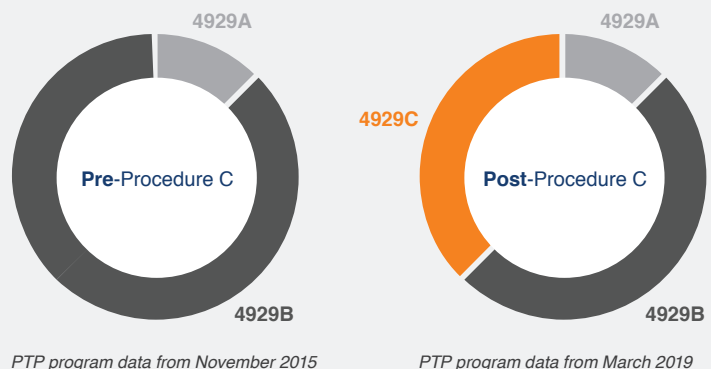
*All procedures require distillation

This method addition included an interlaboratory study (ILS), which was conducted by eight participants using XOS' Clora MWDXRF analyzer and other XRF instruments. The results were compared with the original method precision statements for Procedures A and B. The following was found:

- Clora has better reproducibility than the other Procedure C XRF techniques and exhibits equivalent or better reproducibility than Procedure B
- Clora consistently exhibited better repeatability than Procedure B

XOS' Clora, Clora 2XP, and Sindie +Cl benchtop analyzers comply with ASTM D4929C and are viable solutions for the determination of organic chloride content in crude oil.

Method C is now in use for the ASTM CO PTP program and gaining popularity



Visit xos.com/Clora2XP to learn more

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