

# Ultra-trace Level Detection of Impurities in Polymer Grade Propylene

CONSCI knows the importance of purity in the production of polyethylene and polypropylene. Competitive producers continue to utilize highly sensitive and costly polymerization catalysts that are vital to the production process.

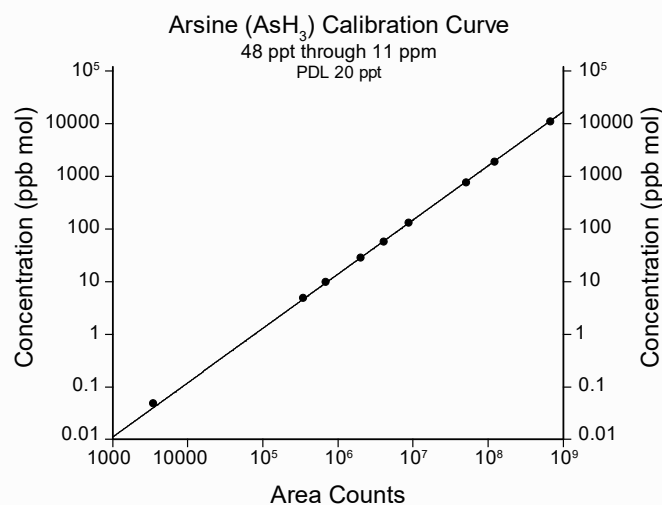
Our Polymer Grade Propylene Analysis can precisely measure low level impurities in propylene to increase the yield and extend the life expectancy of these expensive catalysts. Additionally, producers will appreciate our fast and cost-effective results to accurately meet the needs of their customers.

In particular, the inductively coupled plasma-mass spectrometer (ICP-MS) when used as a gas chromatographic detector enables detection limits for phosphine and arsine at part-per-trillion level, single digit part-per-billion levels for hydrogen sulfide and carbonyl sulfide, and detection of many other species at equally low detection limits.

This sensitivity enables determination of product quality with a confidence level heretofore not obtainable. Furthermore, unlike other detectors, there is virtually no interference from the hydrocarbon matrix.

*Comparison of typical maximum amounts of propylene impurities allowed by the polymerization catalyst and CONSCI's typical detection limits.*

Impurity	Typical Max Allowed	Our Detection Limit	Technique
Arsine	20 ppb	0.05 ppb	GC-ICP-MS
Carbon dioxide	3 ppm	0.10 ppm	GC-PDD
Carbon monoxide	1 ppm	0.10 ppm	GC-PDD
Carbonyl sulfide	1 ppm	5.00 ppb	GC-ICP-MS
Hydrocarbons	30 ppm	0.10 ppb	GC-FID
Hydrogen	30 ppm	0.10 ppb	GC-FID
Hydrogen sulfide	1 ppm	5.00 ppb	GC-ICP-MS
Oxygen	5 ppm	0.10 ppm	GC-PDD
Phosphine	20 ppb	0.20 ppb	GC-ICP-MS
Water	5 ppm	0.10 ppm	QCM



*Calibration curve required for the analysis of arsine in propene at part-per-trillion concentration.*

Start getting better results today!



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