



# NICHE SOLUTIONS FOR PETROCHEMICAL INDUSTRY

PAC is a leading lab and process analyzer manufacturer and a go to provider for the petrochemical industry with a history dating back to 1931.

We combine the world's most respected and long-established brands of analytical and testing equipment into a single manufacturing, marketing and service organization. Each of our brands have long histories of developing best-in-class analytical instrumentation for lab and process applications. The dynamic synergy of the PAC team and its unique technologies has led to the development of unique, cutting-edge instruments.

**Our solutions at PAC provide the following benefits to our petrochemical customers:**



Unrivalled **feedstock** characterization technologies improving process optimization strategies



**Full** impurity analysis of olefins in a **single** run increasing **efficiency**



Wide range of **sulfur and nitrogen** analysis methods extending catalysts lifetime



Chemical and physical property measurements of **aromatics** enabling high product quality



Unique trace level measurements for both lab and **online instruments** improving process control

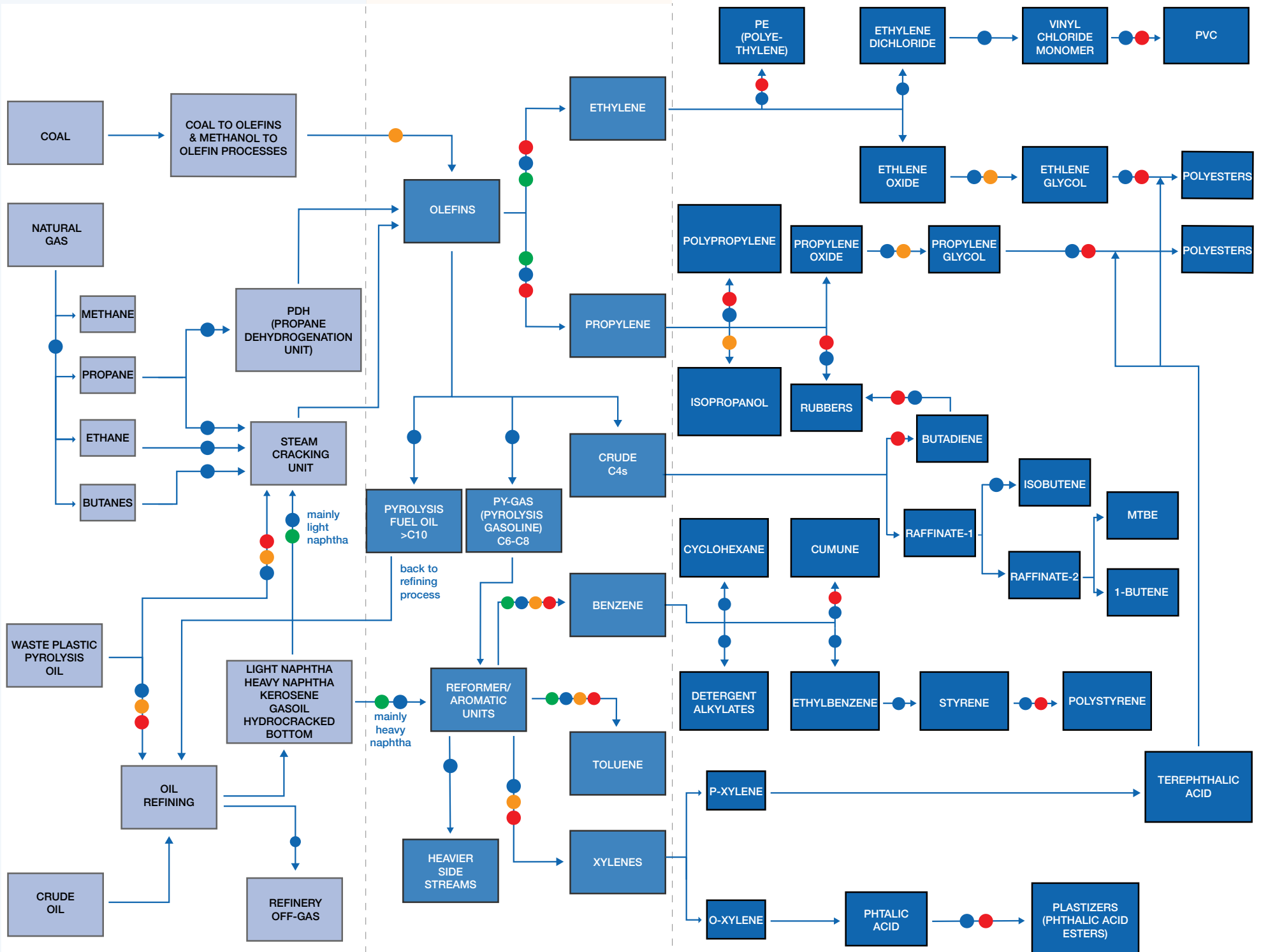


State-of-the-art solution for **distillation** with industry-leading precision

## Main Processed Feeds

## Manufacturing of Primary Petrochemical Building Blocks

## Manufacturing of Some of the 2nd & 3rd Tier Chemicals



		Chromatography Solutions									Physical Property		Elemental Analysis	Process Solutions		
		Olefin Purity Analyzer	Reform-ulyzer	SeNse	RGA Analyzer	LPG Analyzer	Oxy-Tracer	DHA	Custom GC	SIMDIS	GC xGC	OptiDist	Opti-Flash	ElemenTs	NSure	MicroDist
		D6159, D8098, D2163, D2504, D2505, D2712, D5504, D7423	D5443	D7011, D5623, D5504, D5303, custom methods	D2163, D1946, EN15984	D2163, D2712	D7423, D7754	D5134, D6729, D6730, D6733	D7504, UOP744, D7360, D3760, D7057, UOP702, D5713, D7266, D7871, UOP673, D5060, UOP755, UOP603, D6806, E2409, D4424, GPA 2177, GPA 2186, D4526, D7504, D6229, D3749, D3834, D7096, GOST 2177, AC 8612	D2887, D7169	D8396	D850, D1078, D86,	D3828, D3278, D56, D92/93	D7183, D7184, D4629, D6667, D5762, D5453, custom methods	D5453, D6667, D4629, D5176	D86, D7345, ISO 3405
Olefins	Ethylene	●		●			●		●					●	●	
	Propylene	●		●	●	●	●		●					●	●	
	Butadiene													●		
	Butylene								●							
Aromatic	Benzene			●					●			●	●	●	●	
	Toluene								●			●	●	●	●	
	Xylenes								●			●	●	●		
	Heavier side streams		●													
Feeds	Naphtha		●	●			●	●	●	●					●	●
	Refined off gas				●											
	Plastic pyrolysis oil		●					●		●	●		●	●		●
	NGLs								●							
2nd / 3rd Tier Chemicals	Ethylbenzene								●							
	Styrene								●							
	Cumene								●					●		
	Cyclohexane								●							
	Ethylene-dichloride								●							
	Glycols								●			●				
	Isopropanol											●				
	Methanol											●				
	Vinyl chloride								●							
	Detergent alkylates								●							
Polymers								●					●			

## 4 Niche Solutions of PAC for Petrochemical Market



### NSure

ASTM D5453, D6667, ASTM D4629,  
ASTM D5176



NSure is a total sulfur and nitrogen analyzer that offers reliable and repeatable measurements over a wide range, even during process swings and ensures tight correlation with primary test methods. NSure's updated technology guarantees ease of use and maintenance. This innovative process solutions for gas, LPG and liquid samples is ideal for online monitoring of blending and refinery operations, as well as petrochemical, wastewater and emissions monitoring.

#### Key Advantages

- Combines analysis of S & N and goes down to ppb levels
- Meet sulfur regulations and control your process with continuous measurements
- Achieve precise measurements with correlation to primary test methods
- Wide range of samples
- User-friendly and easy maintenance



### SeNse

ASTM D5504, ASTM D5623, ASTM D7011,  
ASTM D7807



SeNse offers best in market performance for high return on investment for GC applications to determine sulfur species in hydrocarbon matrices.

#### Key Advantages

- Best in market sensitivity
- Pressure point in base ensures baseline stability
- Enhanced furnace temperature control improves temperature accuracy and reduces downtime
- New patented probe design improves catalyst capacity and stability of baseline

#### ABOUT PAC

PAC develops advanced instrumentation for lab and process applications based on strong Analytical Expertise that ensures Optimal Performance for our customers. Our analyzers help our customers meet complex industry challenges by providing a low cost of ownership, safe operation, high performance with fast, accurate, and actionable results, high uptime through reliable instrumentation, and compliance with standard methods.

#### HEADQUARTERS

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### Olefin Purity Analyzer

ASTM D6159, D8098, D2163, D2504, D2505,  
D2712, D5504, D7423



Olefin Purity Analyzer combines four channels in two GC's, which can operate in parallel to analyze low levels of hydrocarbons, oxygenates, sulfur components, trace gases in just one run.

#### Key Advantages

It performs ethylene and propylene analysis according to D5234 and D5273 product guidelines and solves measurement challenges like:

- Absorbance of active components, by having a fully inert sample path
- Interferences from air with specially designed valve enclosures purged with Helium carrier gas to prevent air diffusion and improve detection limits
- Low concentration measurement with high sensitivity detectors like HID & SCD
- Issues due to co-elution's of HC components with sulphur components are overcome by using an SCD over PFPD, where the SCD has a higher selectivity, better linearity and an improved stability over previous generations of SCD's



### OptiDist

ASTM D86, D1078, D850, EN ISO3405,  
ISO 918, IP123, IP195, DIN51751, JIS K2254,  
NFN 07-002



OptiDist is the state-of-the-art solution for distillation of aromatics and solvents with industry-leading precision.

#### Key Advantages:

- Easy to use, one button straightforward operation
- Superior precision from the first run
- Fully automated regulation
- Advanced Built-in safety features

Our solutions are from industry-leading brands: AC Analytical Controls, Advanced Sensors, Alcor, Antek, Herzog, ISL, Cambridge Viscosity, Phase Technology, PSPI, and PetroSpec. We are committed to delivering superior and local customer service worldwide with 16 office locations and a network of over 50 distributors. PAC operates as a unit of Indicor, a diversified technology company and a constituent of S&P 500, Fortune 1000, and Russell 1000 indices.

Contact us for more details.  
Visit our website to find the  
PAC representative closest to you.

