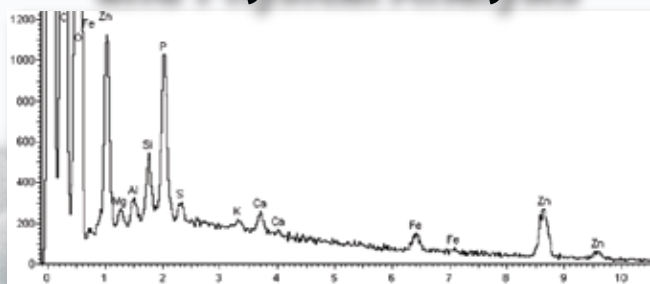


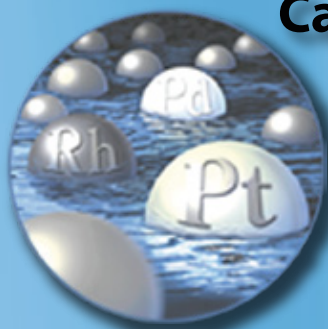
EmeraChem Catalyst Management Services

In addition to offering the finest in catalytic emissions control products, EmeraChem offers a full suite of catalyst management services. As an OEM catalyst developer and manufacturer, EmeraChem brings expertise in catalysis and nano-phase surface chemistry. Services include performance testing, chemical/physical analysis, chemical cleaning, long-term monitoring, and precious metal reclaim.

Catalyst Chemical and Physical Analysis



Catalyst Performance Testing



Catalyst Precious Metal Reclaim



Catalyst Cleaning

Catalyst Monitoring



EmeraChem Catalyst Management Services

Catalyst Performance Testing

- EmeraChem characterizes the performance of full-size commercial catalyst elements and test buttons using a large pilot reactor.
- Temperature, flow rate, and inlet emission levels are controlled to match field operating conditions.
- CO, SO₂, NO, VOCs, and other gases are metered into the system and measured. EPA methods and protocols and a CEM system are used to measure catalyst performance over a range of operating conditions.
- EmeraChem interprets and reports the analytical results and recommends expected life and actions to take to reverse catalyst degradation and restore lost performance.

Catalyst Chemical and Physical Analysis

- Characterizing catalyst properties identifies causes for lower performance, and actions to reverse degradation and extend catalyst operating life.
- EmeraChem utilizes nano-scale microscopic and chemical methods to characterize excessive temperatures, masking of active catalytic sites, and precious metal poisoning.
- Diagnostic analyses are applied in an economical stepwise sequence based on the type of catalyst, operating service, and other factors.

Catalyst Cleaning

- Catalyst performance can oftentimes be restored using EmeraChem's proprietary 4-step chemical cleaning process. The process alkaline and acidic solutions in a recirculation system.
- A small-scale process is used for reciprocating engines (1 – 40 elements) and a large-scale process is used for combustion turbines (40 to 1000 elements).
- Cleaning can be performed at EmeraChem's manufacturing facility or at the customer's site.

Catalyst Precious Metal Reclaim

- Emission control catalysts utilize precious metals such as platinum, palladium, and rhodium. At the end of the catalyst's service life, these precious metals can be reclaimed and recovered.
- EmeraChem offers advanced chemical recovery methods to return the most value to you.

Catalyst Monitoring

- Monitoring services are available to track the condition and performance of catalyst through periodic analysis and testing.
- Utilizing the full-suite of services described above, the cost of catalyst ownership can be minimized.