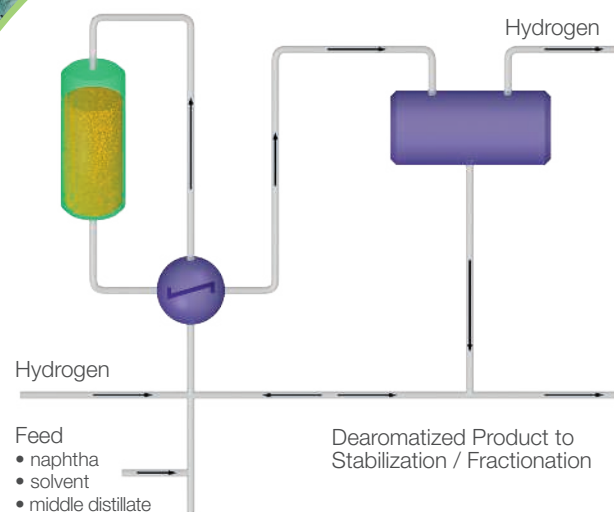


NEXSAT™

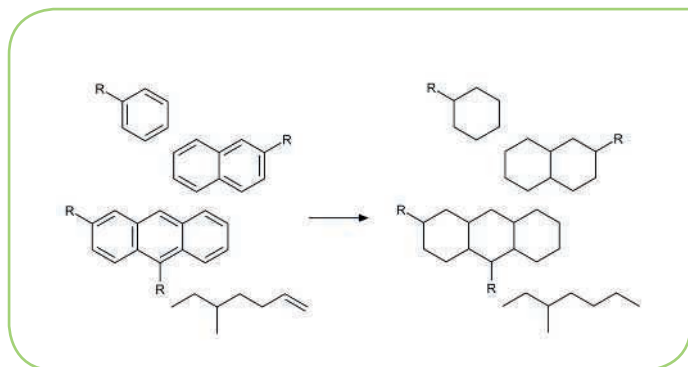
# Hydrogenation Technology For Fuels and Solvents



NEXSAT™ concept for  
reduced aromatics content

# Optimum Process For Motor Fuels and Solvents with Low Olefin and Aromatics Content

Fuel and solvent producers face today the challenge of achieving current and future specifications with high availability at low cost. Market demand for clean motor fuels and environmentally friendly and safe solvents calls for a reliable and cost-effective solution to regulate aromatic and olefin content. With the NEXSAT™ technology, petroleum distillates and solvents will meet low aromatic standards of today.



The liquid feed is blended with feed hydrogen gas and fed into the hydrogenation reactor. Liquid recycle stream is often needed to control the temperature rise across the reactor for feeds reacting highly exothermically. The hydrogenated product is fed to a stabilization or fractionation column where light hydrocarbons are removed.

The NEXSAT™ process is applicable for removal of aromatics from solvents, middle distillates and various gasoline components such as straight-run naphtha, reformate or cracked naphtha. NEXSAT™ enables the production of aromatic free solvents, low aromatic diesel components and benzene free gasoline components in the most beneficial way.

## Process Solution

In the NEXSAT™ aromatics saturation process, a low sulfur distillate feedstock containing aromatic compounds is fed into a hydrotreating process unit, in which its aromatic compounds are hydrogenated in the trickle bed reactor. Typical aromatic content is vol% 20–30.

One of the widely used NEXSAT™ process applications is the saturation of olefinic feed. NEXSAT™ is part of NEXOCTANE™ process when isooctene product is hydrogenated to isooctane product. In NEXOCTANE™ process feed olefin concentration can be 100%. NEXSAT™ process allows production of almost olefin and sulfur free premium gasoline blending component.

## Benefits

### Flexibility

- Flexible aromatic and olefin hydrogenation technology.
- Applications for solvents, middle distillates and naphtha.

### Economic Benefits

Highly effective dearomatization catalyst at low cost

- Catalyst options available for wide processing needs.
- Excellent product quality with minimum cracking.

Low investment and operating costs.

- Moderate design conditions and conventional materials.
- Commonly no need of dedicated fired heater.
- In several applications as well recycle compressor can be omitted.
- Thorough energy optimization and minimal waste

### Easy Operability

- Excellent reactor performance at mild operating conditions.
- Easy operation and maintenance.
- Simple catalyst handling.

### Typical Product Qualities

- Naphtha max. 0.1 vol-% benzene.
- Middle distillates max. 5 vol-% aromatics.
- Solvents max 0.5 vol-% aromatics.
- Light hydrocarbons olefin saturation max 200 vol-ppm olefins.

## Typical Operating Conditions

### Temperature at Reactor Inlet, °C

- naphtha feedstock <100
- heavier feedstock <200

### Operating Pressure, barg

- naphtha feedstock <20
- heavier feedstock <40

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