

CATALYST FORMULATIONS

3-Way | HAPs | Oxidation | Diesel Oxidation DPF | SCR | Urea Hydrolysis | Ammonia Killer

WHY MIRATECH CATALYST FORMULATIONS?

- Consistently Sets the Standard for Best Available Control Technology (BACT)
- Better Designed, Built & Value
- Cost-Effective, No-Hassle Compliance for both Natural Gas & Diesel
 - NOx, CO, HC, VOCs, HAPs, PM10, PM2.5
- Available in NEXT™ and VORTEX™ Element Configurations with
 - Free Washes for Life
 - Two-Year Warranty

APPLICATIONS

- Stationary Natural Gas & Diesel Engines
 - Gas Compression
 - Power Generation
 - Water Pumps & Irrigation
 - Air Compression
 - Others
- Horsepower Range: 26 to 20,000+ HP

FEATURES & BENEFITS

- Formulation Designs Simultaneously Cut Multiple Forms of Emissions:
 - Optimized Catalyst Element Technology
 - First-Time Compliance
 - Low Pressure Drop
 - Resists Vibration & Shock
 - Resists Backfire Damage
- High Activity Design
 - "Poison Resistant"
- Mechanical Durability
 - Reliable Sealing of Exhaust Flow
 - Optimized Substrate and Catalyst for each Application

PRODUCT ADVANTAGE

MIRATECH provides straightforward solutions to the emissions needs of all industrial engine applications. The unique combinations of substrates, formulations and housings is often the standard for Best Available Control Technology (BACT) which allows end users to achieve first-time compliance. MIRATECH's catalyst substrates are reliable, high-performance elements with superior mechanical and thermal durability. MIRATECH's catalyst technology cuts natural gas and diesel exhaust NOx, CO, hydrocarbons, VOCs, HAPs and particulates emissions to federal and state compliance levels at minimum cost with minimum space requirements, pressure drop and impact on your operation.

YOUR BEST BET

Running an industrial engine means running the risk of costly non-compliance fines. MIRATECH's catalyst keeps emissions in check in applications ranging from gas compression; continuous, prime and stand-by power generation to liquids pumping; air compression; marine power and more. Count on MIRATECH catalysts to keep your operation in compliance and on the right side of the "fine" line.

INNOVATIVE DESIGN: VERSATILITY

Sensible, Cost-Effective Solutions

Standard-setting design, expert craftsmanship and top-quality fabrication mean that each MIRATECH catalyst element delivers long-lasting, problem-free performance you can bank on, year after year.

To determine the correct MIRATECH formulation configuration, review the 'Catalyst Formulations' to determine options to cut your emission levels.



CATALYST FORMULATIONS

| CATALYST TYPE * | 3-WAY | NATURAL GAS OXIDATION | DIESEL OXIDATION | DPF | SCR | | UREA HYDROLYSIS | | AMMONIA KILLER | |
|-----------------|-------|-----------------------|------------------|------|--------------|------|-----------------|------|----------------|------|
| | 4SRB | 4SLB 2SLB | CI | CI | 4SLB 2SLB | CI | 4SLB 2SLB | CI | 4SLB 2SLB | CI |
| NOx | 99%* | | | | 99%* | 98%* | | | | |
| CO | 99%* | 99%* | 99%* | 70%* | | | | | | |
| HAPs | 99%* | 99%* | 99%* | 90%* | | | | | | |
| VOCs | 95%* | 95%* | 95%* | 70%* | | | | | | |
| PM10 | 30%* | 30%* | 30%* | 99%* | | | | | | |
| PM2.5 | 30%* | 30%* | 30%* | 99%* | | | | | | |
| Urea to NH3 | | | | | | | 100% | 100% | | |
| NH3 Slip | | | | | | | | | 99%* | 99%* |

* Emissions reduction percentages (%) are typical maximum performance values

4SLB/2SLB = 4-Stroke and 2-Stroke Lean Burn; Natural Gas Spark Ignited (SI) Engines with Exhaust Oxygen greater than 4%

4SRB = 4-Stroke, Rich Burn; Natural Gas Spark Ignited (SI) Engines with Exhaust Oxygen less than 1%

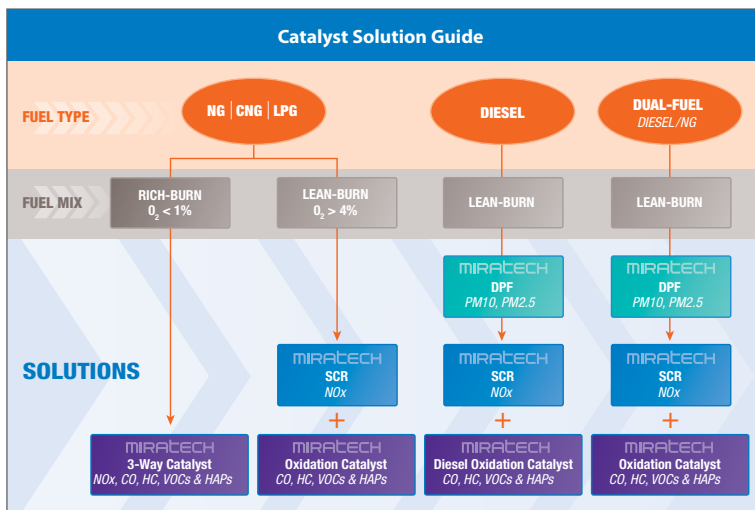
CI = Diesel and Dual Fuel 4-Stroke and 2-Stroke; Compression Ignition (CI) Engines

FORMULATIONS

3-Way | HAPs | Oxidation | Diesel Oxidation DPF | SCR | Urea Hydrolysis | Ammonia Killer

CHOOSE FORMULATION

Use the *Catalyst Solution Guide* below to determine the application 'Fuel Type' and 'Fuel Mix' to help identify the combination of formulation 'Solutions' required.



ELEMENTARY GEOMETRY:

The right fit for any system, the MIRATECH catalyst comes in a wide variety of shapes and sizes to match a wide range of engine sizes, applications, catalyst system requirements, and budgets... The final system selection will be based on specific air regulations. To determine the correct MIRATECH housing, choose the right Catalyst Formulation, Substrate Configuration, Sound Attenuation and Horsepower Range. Match the horsepower with the right MIRATECH housing. Next contact MIRATECH Sale or specify the project at the www.miratechcorp.com Emissions Solutions Guide.



Diesel gensets with a combined SCR & Diesel Oxidation Catalyst package

WHY MIRATECH?

- Advanced Technology
- Product Range: 20 to 20,000+ hp
- Innovative, Cost-Effective, Comprehensive Emissions Solutions
- RICE NESHAP Compliant
- Turnkey Projects
- Unsurpassed Experience & Expertise
- Fast, Responsive, Customer-Focused Service & Support
 - Prevent Non-Compliance Fines
 - Improve Engine & Catalyst Performance
 - Cut Maintenance Costs
 - Maximize Catalyst Life
- Full Service Catalyst Wash & Repair
 - 'Free Wash for Life' on NEXT™ & VORTEX™ Substrates
- Project Management
- Onsite Services
 - Supervision
 - Technical
 - Skilled
- Product O&M Training
- Replacement Parts

EMISSIONS SOLUTIONS

- Catalysts
 - 3-Way
 - Oxidation (Natural Gas & Diesel)
 - HAPs
 - Selective Catalytic Reduction (SCR)
 - Urea Hydrolysis
 - DPF

Housings

- NX Series
- IQ
- CBS
- CBL
- Silencer Combinations
 - VX Series
 - RX Series
 - ZX Series
 - Ground Access

Controls

- SCR
- Active DPF
- Air Fuel Ratio (Rich & Lean Burn)
- Monitors
 - RICE NESHAP
 - DPF

| HOUSINGS | CATALYST FORMULATIONS | | | | | | | CATALYST SUBSTRATE CONFIGURATIONS | | | | | SILENCER Sound Attenuation dB(A) | HP RANGE | |
|---------------------|-----------------------|--------|------------|-----------|-----|-----|----------------|-----------------------------------|--------|------|--------------|-----------|-------------------------------------|----------|------------------------|
| | 3-WAY | NG OXI | DIESEL OXI | UREA HYDR | DPF | SCR | AMMONIA KILLER | METAL | | | CERAMIC | | | | |
| | | | | | | | | NEXT | VORTEX | OPEN | HERRING-BONE | OPEN CELL | | | WALL FLOW PLUGGED CELL |
| NX Series | X | | X | | | | | X | | X | | X | | | 26-325 |
| VX Series | X | | X | | | | | | | | X | | | | 25-37 |
| IQ | X | X | X | | | | | X | | X | | | | | 200-8000 |
| RX Series | X | X | X | | | | | X | | X | | | | | 25-35 |
| ZX Series | X | X | X | | | | | | X | | X | | | | 1200-4500 |
| CBS w/ OXI(DOC/DPF) | | | X | | X | | | X | X | X | X | X | X | | 100-6000 |
| CBL w/ DOC(DOC/SCR) | | X | X | X | | X | X | X | X | X | X | X | | | 100-20,000+ |
| Ground Access | | X | X | | | | | | X | | X | | | | 1400-20,000+ |

Learn More: Phone · Email · Web · "The Emissions Monitor" Subscription

NSCR · SCR · DPF · Silencers · AFRC · NESHAP CPMS · Field Service · Training · Turnkey



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