



GM Global Energy, Fluids, and Lubricants: One GM Team in Collaboration with API and Industry

44th Automotive Petroleum Industry Forum

April 16th 2026

Stephen Kirby, General Motors



zero crashes

general motors



zero emissions



zero congestion

Overview

- The Team
- dexos Status & Transition
- dexos1 Gen4 Development
- EV DU Fluid & Thermal
- Low Carbon Fuels
- TopTier





The Team: Global Energy, Fluids, and Lubricants

All the Fluids in One Team

Fuels –

Pat Geng Global Fuels Technical Specialist & GFB Lead

Elana Chapman Energy and Emissions Regulatory Technical Specialist

Shailesh Lopes Energy Standards Technical Specialist

Veronica Reilly TOP TIER Gasoline and Diesel Program Manager

Fluids and Lubricants –

Khaled Zreik Fluids and Lubricants Technical Specialist

Alex Zack dex-fluids Program Manager

Frank Cooney Engine Oil, Rust Preventatives, EV Fluids

Mike Raney Engine Oil, Engine OLM, HD, Test Development

Tim Cushing Engine Oil, Test Development

Brad Cosgrove Transmission Fluid, Grease

Carmen Harkenrider Coolant & Brake Fluids

Na Tyrer AA, WWF, Refrigerant, HVAC Oil, Data Analysis, Test Development





What Are We Working On?

dexos Engine Oil Programs

- Dual licensing for dexos1 and dexosR
- Dual licensing for dexosD and dexos2

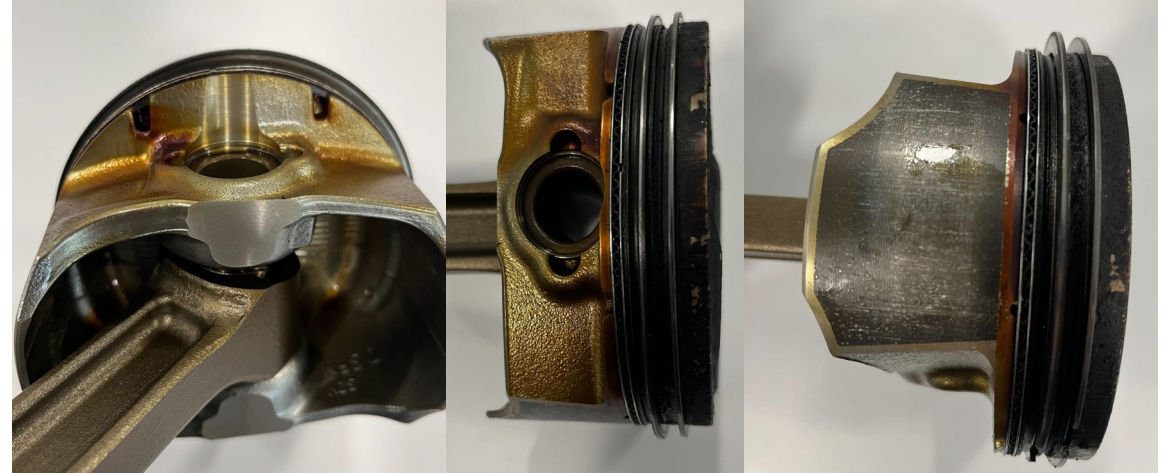
- dexos1 GEN 4
 - Target date of Q4 2027
 - Test development progressing
 - Updated hardware
 - Improved performance
 - Cleanliness!!!!
 - Protection



What Are We Working On?

dexos Engine Oil Programs

- dexos1 GEN 4
 - GDI GMOD
 - Additional deposit tests
 - Updated SPI test
 - Additional wear tests
 - Additional corrosion tests
 - GMAER carryover
 - GMOEE carryover



What Are We Working On?

EV Drive Unit Fluid

- Internal specification published 10/2023
- EDU fluid test development
 - Foam Aeration
 - Bearing wear
 - Gear wear
 - New Test Methods

BEV Coolant

- Vehicle Coolant
 - China: GB Spec
 - Lower conductivity
 - Maintain corrosion protection



What Are We Working On?

Low Carbon Fuels

“GM believes that low-carbon and net-zero carbon fuels can play an important role in reducing emissions from Internal combustion engine vehicles. GM supports the research, development, and use of these fuels to help reduce emissions as part of a broader set of industry solutions”

How?

- Compatibility with low-carbon fuels coming to market
- Partnerships with leading low-carbon fuels producer(s)
- Sustainability and progress toward “three zeros”:
zero crashes, zero emissions, and zero congestion
- Public policy incentives aligned with GM vision
- Technical work and publications in support of GM position



Expanding Electrification

GM has a clear vision for how its position as a platform innovator will include EV hardware components and software solutions that reach far beyond automotive applications. From the aerospace industry to aftermarket, GM is invested in a wide range of opportunities which extend its zero tailpipe emissions mission beyond its own products and services.



Aerospace

GM's deal with Textron and PCS will help produce electrified ground support equipment for airports globally and at scale beginning with baggage tractors and belt loaders

Rail

Alternative energy powered freight locomotives that are being developed and commercialized through a collaboration with Wabtec

Marine

Bringing EV technology to marine applications through GM Marine and also in collaboration with Pure Watercraft

Fleet

From the BrightDrop brand's delivery ecosystem to Ultium Charge 360, GM is bringing solutions, not just vehicles, to commercial transportation

Aftermarket

Chevy Performance's concept Electric Connect and Cruise eCrate package would allow enthusiasts to convert their vehicles into fully operational EVs, demonstrated by Lingenfelter Performance Engineering's recent concept El Camino install

TOP TIER™

APPROVED FUELS

Program Update

April 2026





An exciting new phase for
the TOP TIER™ program

Foundation and Focus

Over 21 years, TOP TIER™ has grown into a **globally recognized fuel quality program** benefiting OEM sponsors, fuel marketers, and consumers.

2025

- Launched TOP TIER™+ Gasoline and Diesel specs
 - Completed pre-approval of qualifying additive packages
- Advanced digital marketing
 - Updated Website
 - Station Finder App
- Standardized program processes via a new Additive Approval Database
 - Approval Certificates

2026

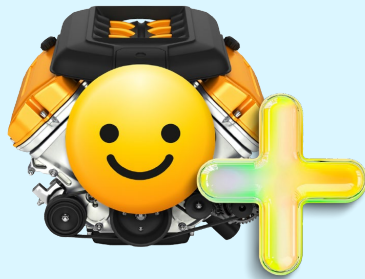
- Update/New standards
 - SPI Statistics
 - E0 Recreation Fuel
 - Higher Ethanol Blends
- Transition from TOP TIER™ →TOP TIER™+
- Expanding global reach into Eastern Hemisphere
- Quality Audit – North America



Prioritization

High-quality fuel detergency & cleanliness requirements keeping engines running optimally for greater Customer Satisfaction

Benefits



Protection

TOP TIER™+ can reduce fuel injector deposits, sticking valves, fouled combustion chambers, valve damage and more



Performance

Regular use of TOP TIER™+ helps prevent the loss of critical fuel economy



Restoration

TOP TIER™+ helps clean existing engine deposits after just a few tanks



TOP TIER™ + Performance Standards

Target January 1st, 2027

TOP TIER™ Gasoline Performance Standards



Traditional TOP TIER™

Protect, Perform, Restore compared to LAC

PFI IVD Avg. <50mg/valve

CCD Avg. <140%

No Intake Valve Sticking

No Organometallics

Post TOP TIER™ at Point of Sale

PFI and GDI Engine Protection

Protect, Perform, Restore compared to LAC

PFI IVD Avg. <50mg/valve

CCD Avg. <140%

No Intake Valve Sticking

GDI Fuel Flow Clean-up Performance

No Harm Tests:

Stochastic Pre-ignition (SPI)

Particulate Emissions

No Organometallics

Post TOP TIER™ at Point of Sale

- Side-by-side specification comparison
- Pump labeling becomes critical to differentiate

Base Decal

Plus Decal



TOP TIER™ Diesel Performance Standards



TOP TIER™ Detergency & Fuel Dispenser Filtration

Engine & Fuel System Cleanliness
Particulates & Water Controls
at retail dispenser

DW10B: Injector Face Deposits
<2% Torque falloff

DW10C: Internal Injector Deposits

Low flow pumps: 10-micron filters
High flow pumps: 30-micron

Water detecting filter media

Post TOP TIER™ at Point of Sale

TOP TIER™ Detergency & Fuel Dispenser Filtration

Engine & Fuel System Cleanliness
Particulates & Water Controls
Improved Lubricity & Stability

DW10B: Injector Face Deposits
<2% Torque falloff

DW10C: Internal Injector Deposits

Oxidation Stability Improvement
Lubricity Improvement

10-micron / 30-micron filters

Water detecting media

Post TOP TIER™ at Point of Sale

- Side-by-side specification comparison
- Pump labeling becomes critical to differentiate
- New 2025 Standards simpler to implement
- Base and Plus levels to endure indefinitely

Base Decal

Plus Decal



Program Administration Company

New Program Administrator

- Tier One Fuel Quality (Midland, Michigan)
- Licensees were contacted, March
- Industry announcement, April



I am writing to inform you that the administration of the Top Tier™ Approved Fuels Program has transitioned from the Center for Quality Assurance (“CQA”) to Tier One Fuel Quality LLC (“Tier One Fuel”), effective March 1, 2026.

Tier One Fuel will assume responsibility for the administrative duties previously performed by CQA.

Thank you to Center for Quality Assurance (CQA)

Tier One Fuel Quality Leadership Team



Ty Smith
President / Service Director



Sarah Goralski
TOP TIER™ Program
Manager

Please help us communicate throughout the API leadership and community of our new program admin company.



Future Shows

We hope to get an opportunity to connect with even more sponsors and additive partners at future shows:

- Advanced Clean Transportation, Las Vegas, May 4-7
- ASTM D02, Chicago, June 21-25
- National Association of Convenience Stores, Las Vegas, October 6-9
- ASTM D02, Chicago, December 6-10



ADVANCING STANDARDS
TRANSFORMING MARKETS



Advancing Convenience &
Fuel Retailing

Don't forget to DOWNLOAD the App!



- **Location-Based Search:** Users can find nearby fuel stations offering TOP TIER™ Approved Fuels with a convenient map feature.
- **Saved Brand and Fuel Preferences:** Filter results by preferred fuel brands and types, such as gasoline, diesel or both.
- **Amenities Information:** Discover latest station offerings – soon to show pricing and rewards!





Thank You for Your Participation in GM's Licensed Fluid Programs



Questions?

