



CORROSION INHIBITER
FOR ETHANOL BASED AND ETHANOL
BLENDED FUELS

DCI-11 Plus ClearTrak™

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WHAT'S THE CHALLENGE?

- Denatured Fuel Ethanol when produced can be very acidic. It can also be corrosive to metal surfaces when water is present which may lead to a host of end user issues.
- As a result of these properties downstream assets from can all fall victim to rust and pitting over time
 - Storage tanks
 - Pipelines
 - Transport and railcar tanks
 - Vehicle fuel systems including fuel pumps

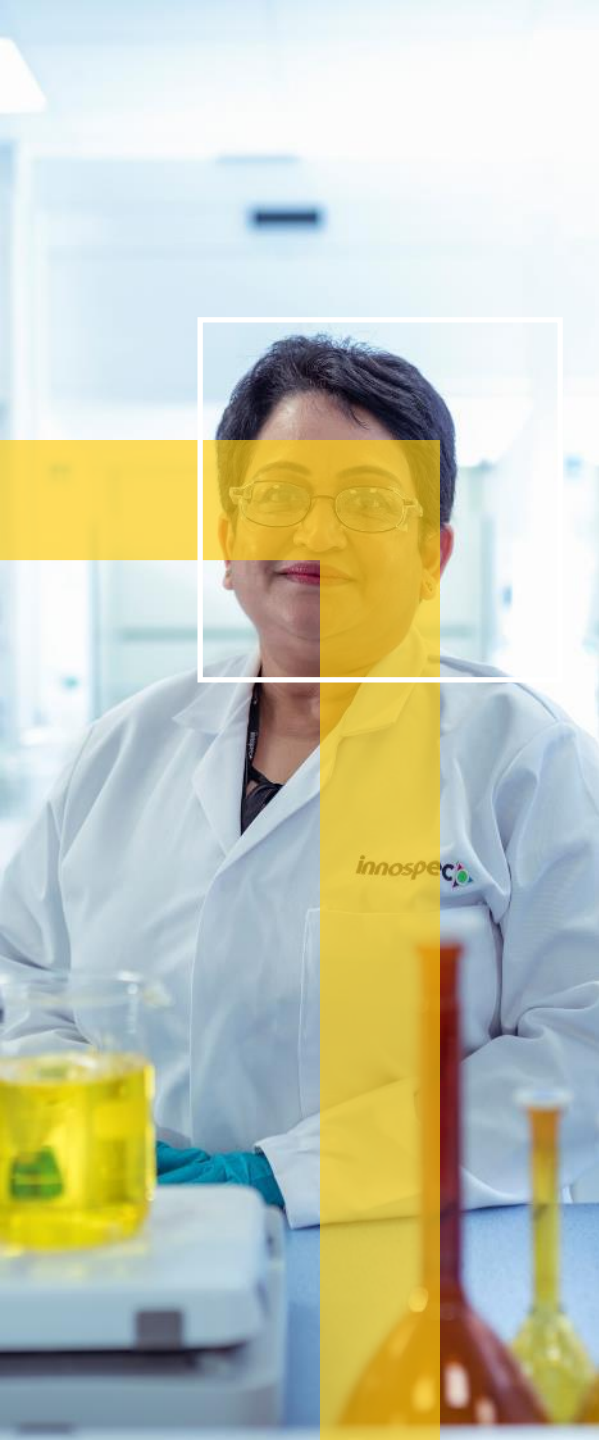


WHAT ARE THE SPECIFICATION?

- ASTM D4806 Standard Specification Denatured Fuel Ethanol for Blending with Gasoline
 - ASTM D6423 pHe range requirement of 6.5-9.0.
 - Most untreated fuels will have a pHe < 6.0.
- NACE TM0172 - There is no corrosion specification in ASTM D4806 but the Renewable Fuels Association (RFA) recommends a NACE TM0172 Rating of B+ or better.
 - Most untreated fuels will have a NACE TM0172 corrosion rating of B or worse



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HOW DO WE MEET THESE SPECIFICATIONS

DCI-11 Plus ClearTrak™

Corrosion Inhibitor

Amine Buffer

Colorless Marker

Low Temperature Handling

Improves Corrosion Inhibition

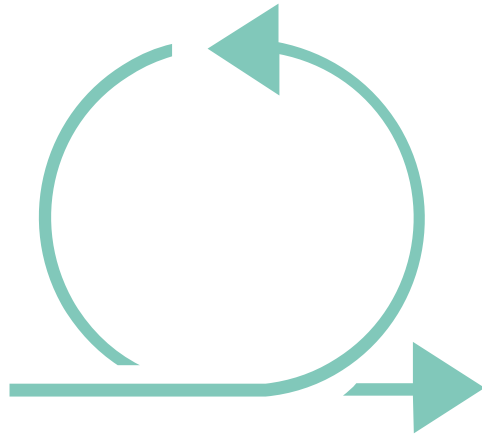
Raises pHe Levels to acceptable range

Easy Treat Rate Verification

Can Be Used Without Heating Or Temperature Control

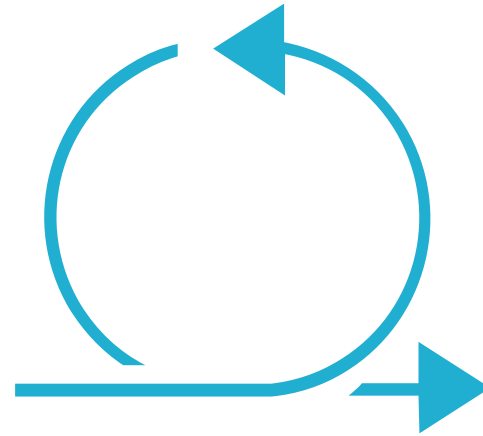


HOW DOES IT WORK?



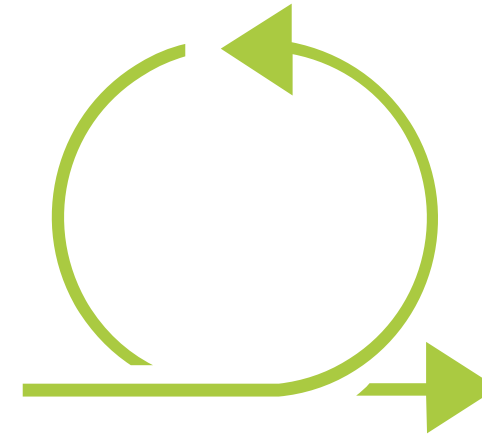
pHe

Contains an amine buffer that neutralizes acids and raises pHe.



Corrosion

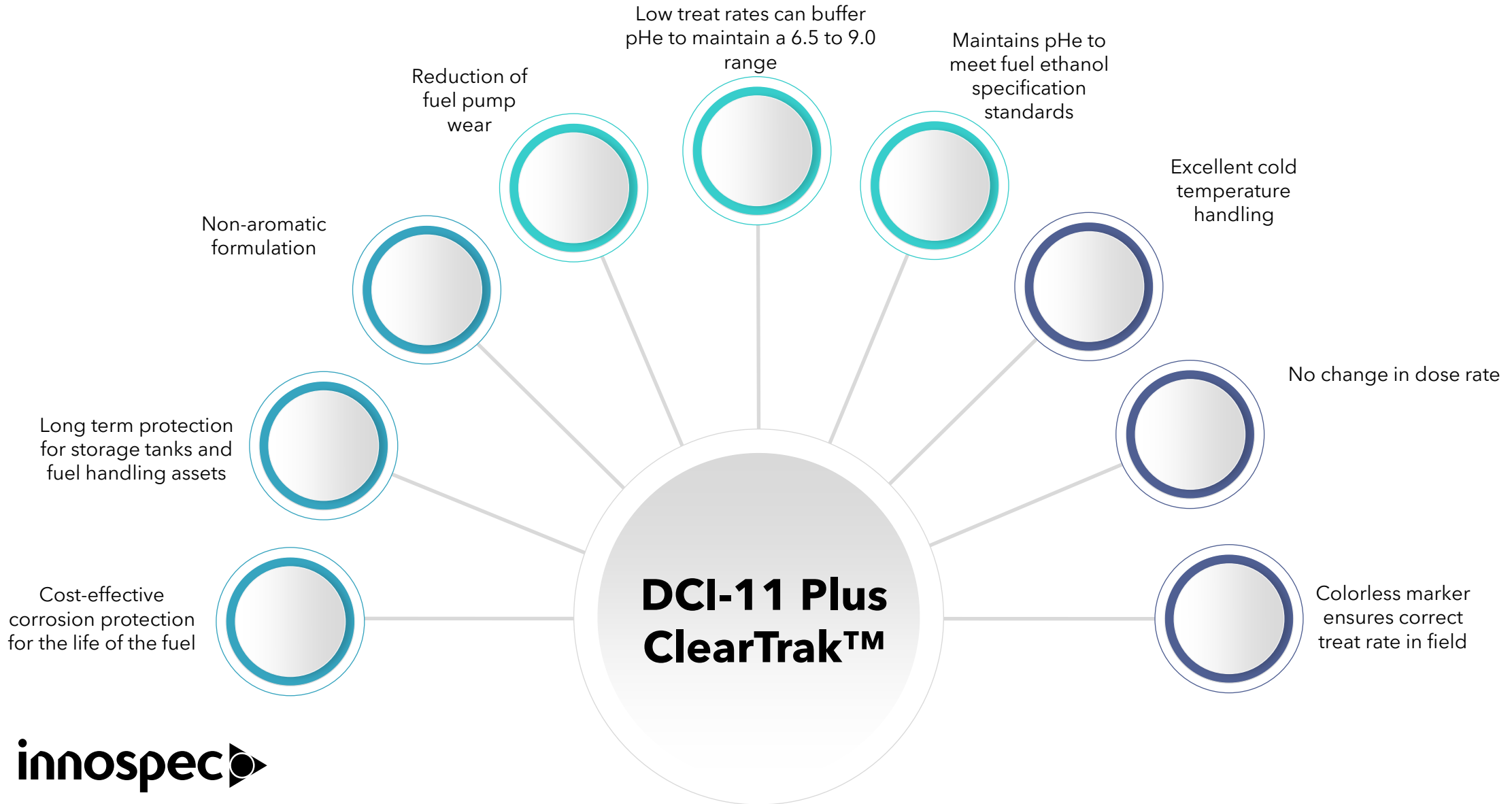
Forms a protective barrier on metal surface preventing water from coming in contact with metal.

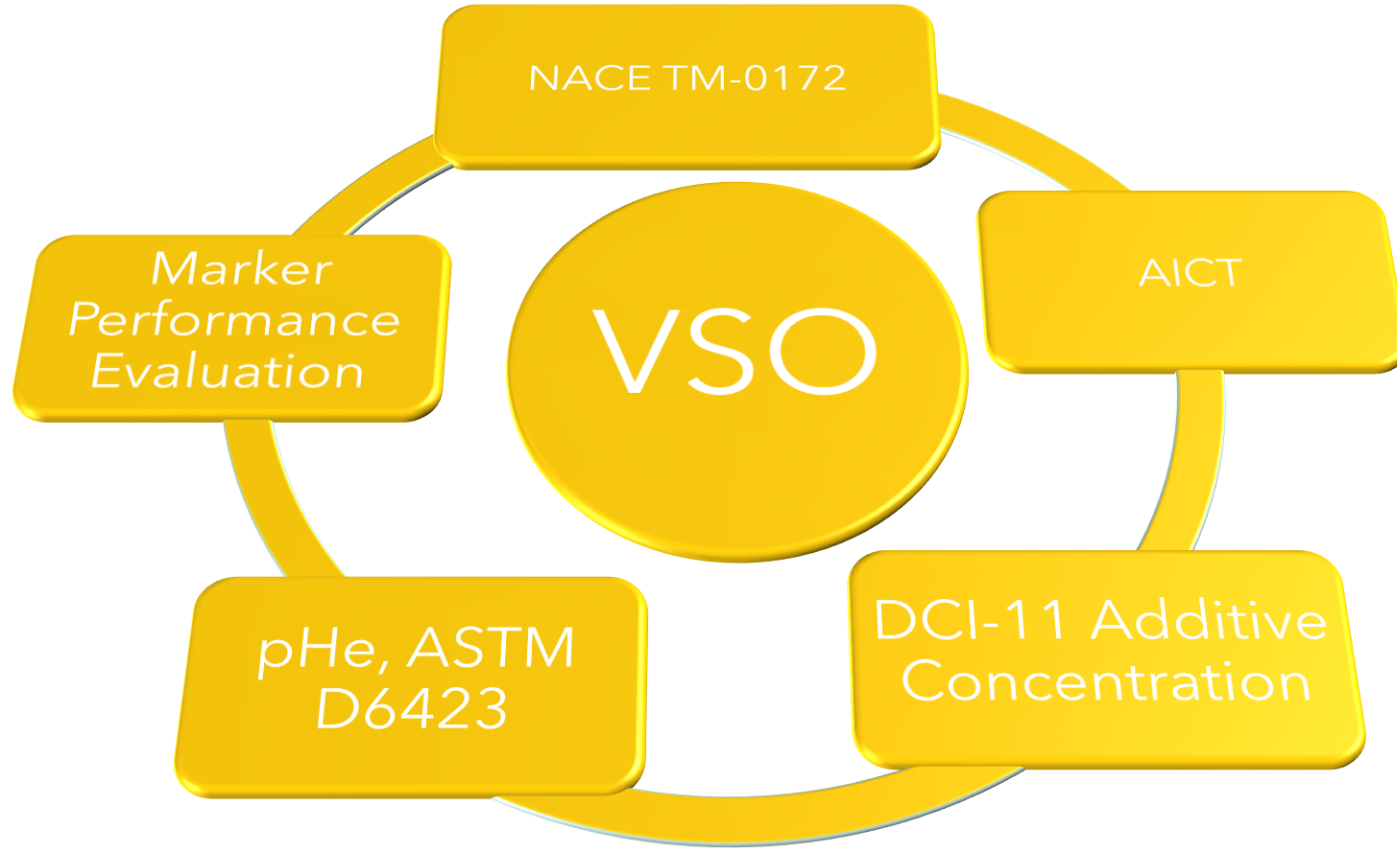


Colorless Marker

Unique, patented technology that allows for detection via handheld fluorometer in the field.

WHAT ARE THE BENEFITS?





VERIFICATION SURVEILLANCE OPTIMIZATION PROGRAM



SUMMARY

DCI-11 Plus ClearTrak™

- Marker is colorless in the corrosion inhibitor and in the finished fuel.
- Non-aromatic formulation for exporting ethanol
- Allows the plant to determine how much corrosion inhibitor is in the finished ethanol.
- Can be measured by a hand-held fluorometer.
- Overtreatment will not discolor the fuel.
- Continuous optimization support with VSO program



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