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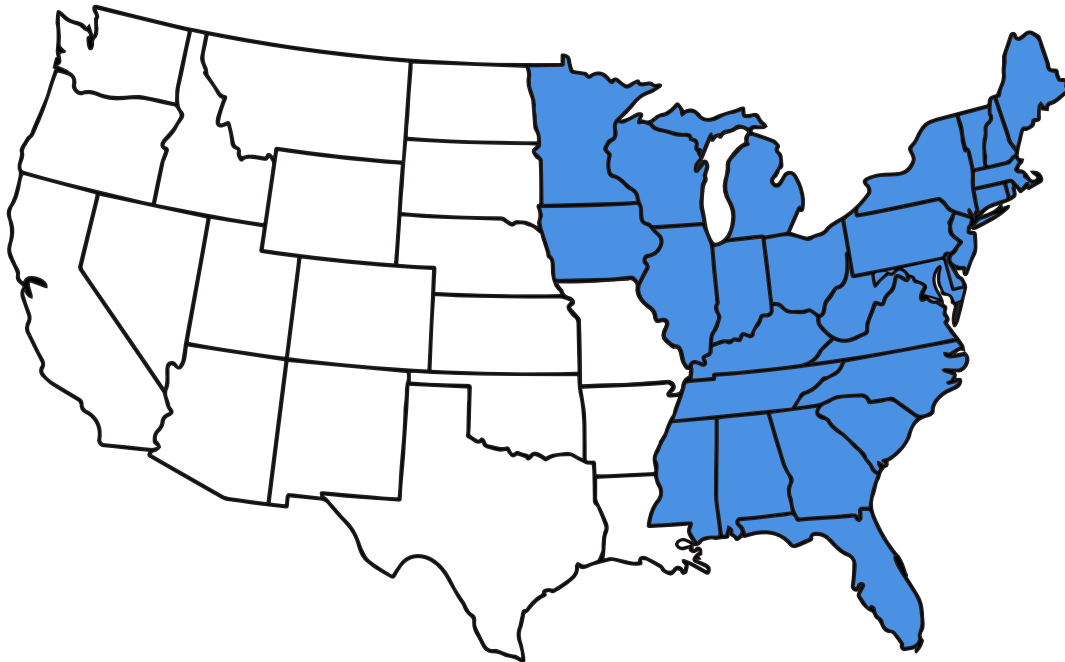


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Know, Like & Trust

At the advent of the dot com era, the business oriented social media company LinkedIn was launched. The ease of connecting with industry colleagues, potential suppliers and customers attracted millions of users. I remember reading articles at that time declaring the end of trade shows and association events because of LinkedIn.

Twenty years later, COVID paused the entire world. Businesses quickly started using services like Zoom and Teams to fill their need to interact with one another. Similar to the LinkedIn prognosticators, I read articles during COVID declaring the end of trade shows and association events because of the ease of using Zoom & Teams.

While it is true technology has made it easier to connect, there is just no substitute to the networking and industry education that occurs at in-person events.

It turns out that LinkedIn is a mile wide, but only an inch deep. Association events are an inch wide, but are a mile deep. The quality of the networking that occurs in-person dwarfs virtual offerings.

For Zoom and Teams meetings, let's just say I participated in a few virtual happy hours during COVID and they were sad alternatives to the real thing. In-person events allow attendees to develop deep and meaningful relationships.

Those who predicted the demise of trade shows and association events missed something. People prefer to do business with people they know, like and trust. There is no better and efficient way to get to know, like and trust potential business colleagues than attending in-person trade shows and association meetings.

Without the deep and meaningful relationships developed at in-person events, the risk of becoming a commodity and selling on price is increased.

The 2022 NORA Convention & Trade Show was a huge success. Despite having to deal with two hurricanes in the month and a half before the event, it was our largest gathering in the post-COVID era. Members experienced amazing education sessions and valuable networking.

This confirms my theory that people prefer to do business with people they know, like and trust. Contrary to the naysayers, in-person events are alive and doing very well.

I know many NORA members have not been out to industry events since COVID. If you fall into that category, I strongly encourage you to attend at least one of the three 2023 NORA Events where you will get to know, like and trust many new industry contacts and get the knowledge and networking you need to succeed in 2023. ■

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INDUSTRY CALENDAR

(meeting dates are tentative and subject to change)

2023

National Asphalt Pavement Association Annual Meeting

February 5-8, 2023
Miami Beach, Florida

NORA Winter Meeting

February 22 - 24, 2023
New Orleans, Louisiana

Texas Commission on Environmental Quality (TCEQ) Trade Fair & Conference

May 16-17, 2023
Austin, Texas (NORA will be exhibiting.)

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Industry News

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SEND ANY INDUSTRY NEWS UPDATES TO COMMUNICATIONS@NORANEWS.ORG.

Shell Lubricants and Blue Tide Environmental Announcement

Pennzoil-Quaker State Company, a subsidiary of Shell plc (“Shell”), has acquired a 49% interest in NORA Member Blue Tide Environmental LLC (“Blue Tide”). Blue Tide is making progress on a 5,000 barrel per day plant in Baytown, TX which is scheduled to start up in 2024.

“We are thrilled to collaborate with Shell to increase access to reliable and high performing recycled lubricants,” said Mark Bouldin, Chief Executive Officer of Blue Tide. “As we continue to make progress on the completion of our state-of-the-art facility, working with exceptional organizations like Shell and Tailwater will allow us to hit the ground running upon completion and position Blue Tide as the premier provider of sustainable, high-quality Group II+ base oils.”

Shell and Blue Tide will look for further opportunities to work together to strengthen the circular economy for lubricants.

Michigan PFAS Regulations Struck Down By Court

On November 15, 2022, a state court struck down Michigan PFAS regulations related to drinking water enforceable limits. The Court found the state did not adequately consider the cost implications of the standards. The ruling provides clues as to similar arguments that could be advanced when certain companies challenge federal drinking water standards and the CERCLA PFAS designation in courts.

The Michigan court ruling certainly demonstrates to companies contemplating whether to legally challenge the EPA’s upcoming PFAS drinking water MCLs or the proposed CERCLA designation of PFOA and PFOS that there are courts willing to scrutinize the undertaken legislative process to ensure that all necessary procedures were followed. This will be especially important as the drinking water standards are likely to be challenged on grounds similar to the Michigan lawsuit (as well as others) and the CERCLA designation is likely to be heavily opposed in court proceedings due to the EPA not conducting a rigorous RIA process.

India Sends More Vacuum Gasoil To The U.S.

India has increased its vacuum gasoil (VGO) exports to the United States in 2022 in an abnormal trade flow for the oil product as the West is looking for alternatives to replace Russian supplies

The United States and Canada banned Russian oil imports over Moscow’s invasion of Ukraine, while sanctions from the European Union on Russian crude and oil products imports will take effect on Dec. 5 and Feb. 5, respectively. U.S. and EU sanctions do not apply to refined products produced from Russian crude exported from a third country as they are not of Russian origin.

Meanwhile, India, the world’s third-largest oil importer, has been ramping up Russian crude imports and increasing oil product exports to the West for higher margins.

OSHA Top 10 Violations of 2022

OSHA recently released its list of the top 10 most violated workplace standards. The following list is for fiscal year (FY) 2022—that ended September 30.

1. Fall Protection – General Requirements
2. Hazard Communication
3. Respiratory Protection
4. Ladders
5. Scaffolding
6. Lockout/Tagout
7. Powered Industrial Trucks
8. Fall Protection – Training Requirements
9. Personal Protective and Lifesaving Equipment — Eye and Face Protection
10. Machine Guarding



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Conference & Trade Show

Naples, Florida

November 9-12, 2022

The 2022 NORA Conference and Trade Show in Naples attracted over 240 attendees and 39 exhibitors. Weathering the storm, attendees gained valuable insight through networking and industry education sessions.

The conference featured various educational sessions headlined by keynote speaker Kris “Tanto” Paronto. The title of his address was: “Crucible of Crisis: Resilience in the Face of Adversity” Additional speakers presented on a wide variety of industry topics (see page 9).

All speaker PowerPoints for the conference sessions are now available online in the members-only section of the website. A list of these PowerPoints can be found on page 9. The conference featured several events, including the NORA Fishing Expedition, the NORA Golf Tournament, and the Spouse/Companion Culinary Tour. The conference concluded with the Closing Party featuring a Casino Night theme. Photos of these events can be found on pages 10-19 as well as online in the Events pull-down menu.

NORA would like to thank the conference sponsors for their support (please see page 20).



Save the Date

2023 NORA Winter Meeting February 22-24, 2023 • New Orleans, Louisiana

The 2023 NORA Winter Meeting will be held at the Ritz-Carlton New Orleans in February.

Register now using the form on page 24.

In addition to networking with industry leaders, the meeting will address EPA's intention to ask for comments in 2023 on “adding language to Part 279”.

This is a significant concern to NORA and its members since EPA has not “added language to Part 279” in over three decades. The Standards for the Management of Used Oil were published on September 10, 1992. Register for the 2023 NORA Winter Meeting to keep up-to-date on this important issue and help NORA prepare to defend Part 279.

2022 NORA Conference Presentations

These presentations were made at the NORA Conference. Visit the Members Only Resource Center at noranews.org to view them online.



EH&S: Operations Integration and Latest Regulatory Enforcement Trends

Presented by: Chip Duffie, EHS Momentum



Debunking the Myths about Working with the Military

Presented by: Richard Klingel, DLA Disposition Services



NextGen Environmental Policies: Threat or Opportunity for NORA Members

Presented by: Gary Risse, Trihydro Corporation



Evolving the Driver Job with the Modern Workforce

Presented by: Leah Shaver, National Transportation Institute



2023 Economic Outlook: Impact on Oil Market

Presented by: Dr. Loren Scott, Loren C. Scott & Associates



Used Oil Supply Analysis + Government Affairs Executive Summary

Presented by: Scott Parker and Jack Waggener, NORA

2022 NORA CONFERENCE PHOTOS

Over 240 industry leaders gathered in Naples, Florida in November 2022 for the 2022 NORA Conference and Trade Show. The event featured 39 exhibitors in the trade show, seven industry education sessions, fishing, golf and a casino night closing party.



KEYNOTE SPEAKER KRIS PARONTO

Kris Paronto kicked off the meeting with his inspiring message in his presentation of “Crucible of Crisis: Resilience in the Face of Adversity”. Members rated the keynote as one of the best they have ever heard at a NORA event. Kris was part of the CIA annex security team that responded to the terrorists attack in Behghazi, Libya. His story was made into the movie “13 Hours”.



INDUSTRY EDUCATION SESSIONS

2022 Convention attendees were presented with valuable industry education sessions to help keep them current on opportunities and threats facing the industry and their businesses. Copies of the PowerPoints are now available on the members only section of the NORA website. See page 9 for a list of the presentations available.



SOCIAL ACTIVITIES

The NORA event wasn't all business. A brunch was available for the many spouses/companions that were in attendance. In addition, an off-site tour called "Best of Naples Food Tour" allowed for informal networking and a unique experience to explore Naples as a group.



TRADE SHOW

The 2022 NORA Trade Show featured 40 companies displaying the latest products and service for NORA members. Staying current and networking with important vendors to the industry helps keep NORA members competitive in the marketplace.





THE 31ST ANNUAL NORA-DEXSIL OPEN

Despite the threat Hurricane Nicole, the 31st Annual NORA-DEXSIL Golf Open was held in Naples, Florida. Over 50 golfers participated in the event. NORA thanks Dexsil for its continued support of this event.





NORA-VERTEX FISHING EXPEDITION

Once again, Vertex Energy sponsored the annual fishing expedition. Participants loaded onto several boats and went through the mangroves as they fished for Snook, Redfish, Spotted Sea Trout and Mangrove Snapper.



CLOSING PARTY – CASINO NIGHT

The 2022 Conference wrapped up on Friday with the Casino Night Closing Party that was brought to members by Valicor Environmental Services. It was the perfect way to wrap up the event with casual, yet competitive, networking. There were multiple casino games available and several members generously donated prizes.

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Complete one form for each person. Online registration available at www.noranews.org > Events

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Registration

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Is this your first time attending a NORA event?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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<input type="checkbox"/> 1/3 Page Horizontal B&W	\$200
<input type="checkbox"/> 1/4 Page Color Ad	\$200
<input type="checkbox"/> 1/4 Page B&W Ad	\$175
<input type="checkbox"/> Color Logo in Company Index	\$150

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Managing the environmental risks of severe weather events

by: Liberty Mutual Environmental

In 2021, the U.S. experienced 20 severe weather events that totaled more than \$152 billion in damages. These events can devastate communities, and not just in the immediate aftermath. Water and air pollution, mold, property damage, construction delays, and other factors can have lasting consequences on community and business development for months and years afterward.

However, there are actions companies can take to help address these exposures. Learn more about the potential environmental impacts of severe weather, along with best practices to prepare for—and recover from—extreme weather events.

Mitigating mold exposure and safety risks

Any situation in which water penetrates wood framing, drywall, insulation, and other structural materials creates an environment where mold and bacteria can thrive. In the aftermath of a severe weather event—particularly moisture-laden storms—mold contamination is a top concern.

Absent swift remediation to dry and dehumidify impacted areas, businesses could face a costly and technical process to remove and replace unsalvageable materials. The exposures aren't limited to the physical structure, either.

Mold exposure is a health hazard. If businesses fail to follow

proper protocols to address mold growth after an event, their employees and customers could experience health problems, which can lead to bodily injury claims.

Protecting against storage tank damage and pollutant releases

Storms push our infrastructure to its limits—sometimes with disastrous consequences. Hurricanes, for example, often produce millions of tons of toxic debris and waste, including waterlogged wood, drywall, plaster, and electronics, which can deteriorate and release hazardous chemicals into the environment. Additionally, storms can cause release of oil from tanks, as well as other toxic chemicals.

Pollutant releases from storage tank leaks is another significant risk for businesses after a weather event that frequently gets overlooked. Even small-scale leaks can be disastrous for communities, including leaks in saltwater disposal wells, agricultural waste leaks during floods, and leaks from damaged pipes and valves after an extreme freeze. Lightning strikes can cause ruptures in storage tanks, which often lead to fires.

In addition to cleanup costs, companies that aren't prepared for severe weather events may face environmental liability claims due to damage to the water supply, as well as local plant and animal life.



Preparing for business continuity in an uncertain environment

Although businesses often feel pressure to reopen quickly after a disaster, it's important to consider both the shorter-term dependencies, which can constrain recovery efforts, as well as the longer-term environmental impact. The systemic nature of severe weather events can prevent businesses from recovering as quickly as they would like. For example, in the immediate aftermath of a storm, snarled supply chains, prolonged power outages, and shortage of labor can impede recovery efforts. Your business may be one of several in need of specialized service providers and remediation assets.

In the longer term, threats like mold and pollutants released into the water and atmosphere can generate long-tail health and structural risks, which may not be experienced immediately. Taking precautionary steps before an event occurs, as well as implementing a plan following an event, can help reduce your recovery costs and ensure your customers and employees are as safe as possible.

Consider the following mitigation actions to help your business reduce the risk of environmental claims after a severe weather event:

- Review the Environmental Protection Agency's resources on commercial operation mold cleanup and remediation.
- Develop a comprehensive water intrusion protocol and mold maintenance plan that includes detailed checklists for monitoring and responding to mold issues.
- Designate employees who are responsible for implementing the plan.
- Identify predesignated service providers to help with mold remediation and waste cleanup.
- Identify a plan for backup power.
- Review where storage tanks are located and protect them with adequate secondary containment. Perform routine maintenance and inspections.
- Consider environmental insurance coverage, which can help cover the adverse financial impact of mold and other pollutants.

During these recovery periods, insurance providers are an invaluable asset to help businesses evaluate environmental risks and choose the best path forward. We offer specialized environmental coverage and risk-management expertise that can help businesses mitigate environmental risk. Learn more about our comprehensive environmental liability solutions.

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For any questions about this article, contact Liberty Mutual Environmental. www.libertymutual.com

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Tips and Tricks for Karl Fischer Analysis

by: GFS Chemicals

History of KF

In 1935, Karl Fischer discovered water content in a substance can be determined using a solution of iodine, methanol, sulfur dioxide and pyridine. In the 87 years since his discovery, many improvements have resulted in a technique that is invaluable to multiple industries.

The technique is largely accomplished with laboratory instrumentation and special reagents. The instruments fall into 2 categories: volumetric KF titrators for substances with water content primarily in the 100 ppm to 100% range, and coulometers for samples in the 1 ppm to 5% range. The preferred method is an injection into the titration vessel with a syringe. Solids can be analyzed if they are soluble, or if they are thermally stable and release water upon heating with an oven. Opening a titration vessel to add a solid often introduces ambient moisture, which can impact the result.

The majority of Karl Fischer analyses are straight forward. However, pH, solubility issues, side reactions and poor lab practice/instrument maintenance can derail the results.

pH:

The KF reaction proceeds accurately when the pH range of the system is between 5 and 7.5. If the sample changes the pH outside of this range, the titration may proceed very slowly or not end at all. pH shifts can be managed by adding either benzoic acid or an imidazole based buffer to the titration vessel.

Dissolution:

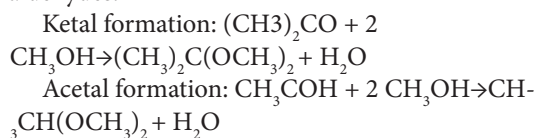
In order to determine the water content of a substance, the substance has to completely release the water into the solvent or coulometric reagent. Methanol is the most common solvent for KF, but it doesn't dissolve everything. Adding a second solvent can promote the dissolution. Common solubilizers include toluene, chloroform, hexane, pentanol and formamide. One overlooked solubilizer is heat. Temperature jacketed titration vessels are available. Some samples require a long stir time or mechanical homogenization to fully disperse the sample. Take crude oil as an example. It requires a solvent blend containing both chloroform and xylene. The xylene aids in the extraction

of all the water out of the tar present in the crude. Chloroform is required to dissolve the oil. Homogenization/stirring is also crucial.

Finally, some samples won't release their water at all. These samples might be a candidate for a KF oven.

Side reactions:

One of the most common side reactions is the sample reacts with methanol, creating water, resulting in a false high water content. This is prevalent with samples that contain ketones and aldehydes.



Another common side reaction is the sample reacts with iodine, again resulting in a false high water content. Mercaptans, amines, and ascorbic acid are known to react with iodine.

Lubricants are becoming increasingly complex in formulation, with additives proving to contribute to side reactions.

Depending on the source, side reactions can be managed with a judicious choice of methanol free reagents, cooling using a jacketed titration vessel, chemical masking, and KF ovens.

The KF oven:

For those samples that don't release water to a solvent, don't dissolve (like plastic), or have uncontrollable side reactions, the KF oven is an elegant solution. The sample goes in a vial, the vial is heated. Water is "evaporated" from the sample, and a carrier gas moves the water vapor to the KF instrument for analysis. The sample must be thermally stable at the oven temperature.



Lab tricks:

Technique is key in KF. Leave a drop of sample on the needle tip and it will most likely adhere to the underside of the septum, resulting in a low result. The drop must be drawn back into the syringe before pulling the needle through the septa. If you depress the syringe too rapidly, you risk spraying the sample on the walls of the titration vessel, and the measured result may be low.

Standardize the titrant and verify the instruments are working properly. Bare minimum, volumetric titrants should be standardized weekly. In the pharma industry, most SOPs state to standardize titrants and check the coulometer functionality daily.

Coulometric generators with diaphragms can get dirty. Clean them bi-weekly. Change the catholyte at least once a week.

If you believe you are seeing a side reaction, a water standard used as a spike may confirm your theory.

Ambient moisture can still seep in. This will be apparent in the drift measurement. If the desiccants aren't replaced before they are exhausted, water in the ambient air will react with the reagents and prematurely deplete them. Septa, seals and electrodes wear out. Surprisingly, so do electrode cables.

Always have spare septa, seals, electrodes and desiccants on hand.

Summary

The KF technique is remarkably easy to use and reproduce once the system is set up correctly, and you master the injection technique. If it wasn't, it would not have endured for 87 years! ■

For any questions about this article, contact GFS Chemicals <http://www.gfschemicals.com>

Cause	Remedy
Aldehydes and ketones	Use reagents that are methanol free
Samples drive pH down	Add imidazole or buffer solution
Samples drive pH up	Add benzoic acid
Incomplete dissolution	Use reagents that are formulated for your sample type, add a co-solvent to increase solubility, heat using a thermostatable titration cell.
Reacts with iodine or other substances	Use a KF oven or use the external extraction technique
Thiols	Mask with n-ethylmaleimide
Organic peroxides	Cool using a thermostatable titration cell make sure enough base and SO ₂ are present
General side reaction/insoluble	KF Oven

A solution for VTAE: Surface Flash Cracking

by: Sweet Gazoil Inc.

Surface Flash Cracking (SFC) is a continuous thermal cracking process. It uses heat to decompose organic materials in the absence of oxygen. It operates at atmospheric pressure. The process is flexible both in the feedstock it can treat, and in the product slate it can achieve. Because the SFC reactor is self cleaning, contains no catalyst or fluidized bed, it can accept contaminated feedstocks. In the absence of a liquid phase, the reaction temperature can be adjusted to transform Vacuum Tower Asphalt Extender (VTAE), used motor oils (UMO), post-consumer plastics and other “wastes” into a wide variety of products from carbon black for inks, greases to be used as protective coatings, naphtha to be transformed into plastics and fuels such as diesel.

An SFC process includes three sections:

- 1- The feedstock is preheated to below its cracking temperature, combined with an inert gas (ex: superheated steam or nitrogen) and sprayed in small droplets in a rotating kiln.
- 2- Inside the reactor free falling plates are heated to a specific temperature depending on the desired product slate. The droplets hit the plates where they crack instantly. The product vapours are mostly free of metals and sulphur. These items attach to the released carbon to become the solid product, or “coke”.
- 3- The free-falling plates scrape the coke off each other and off the reactor wall. The coke is quickly taken out of the kiln, mostly by mechanical means. The solids entrained with the vapors are separated out as soon as they exit the reactor. The clean vapors are condensed without fouling the equipment.

The key difference between SFC and other pyrolysis (or coking) processes is the very short residence time in the reactor.

SFC: The development of an innovative process

In the 1990’s small UMO plants (about 75 BPD) operated with batch reactors such as in acid/clay or Shurtleff. Investors wanted a continuous process that could transform UMO into useful products without waste to be disposed of. Thermal cracking of UMO in a rotating reactor was first tested on a bench scale unit. The results of the laboratory test served as the basis to design and build a 300 BPD demonstration unit that produced fuels and secondary feedstock to a refinery.

Several innovative solutions were needed to bring the plant to design capacity and to improve run lengths. SFC was born when the charge in the reactor was replaced with plates: they served as reaction sites and kept the reactor walls, and each other, free of coke. Both plant capacity and run lengths improved: the first from 140 BPD to 300 BPD, the second from 2 days to over 6 weeks. The introduction of steam or of another non- reactive gas in the reactor was tested in a laboratory in Milwaukee.

The process was later adapted to VTAE. There were new challenges to overcome and to which solutions were found.

The reactor feed temperatures were lower than expected. This highlighted the need to improve the reactor feed pre-heat section. Later experiments determined the reactor feed temperatures for plastics.

The amount of solids produced was higher with VTAE than with UMO. The reactor internals and solids removal system were modified accordingly.

The seal between the rotating kiln and the stationary equipment proved to be weak in this context. A new seal design was recently tested while modifying a batch plastic thermal cracking unit. The new seal was only one of many plant changes. That plant can now make better products in one reactor than it originally could using two reactors in series.

SFC and the market:

Treating a variety of contaminated feedstocks required a flexible process that became possible by using equipment not normally found in refineries. This tends to make refinery specialists nervous. Further improvements brought the plants to the Class 1 division 2 specifications. Thermal cracking of plastics still has a bad reputation since many other processes failed to deliver quality products and, in certain jurisdictions, it is considered akin to incineration.

However, as previously mentioned, SFC is flexible: it can treat UMO, VTAE and plastics to make a variety of product slates. SFC is a simple process, easily operated with a minimum of personnel. Only two operators per shift are needed for a stand-alone SFC unit. In most cases, no new operators are required when SFC is integrated into an existing plant.

SFC’s capital and operating costs are relatively low. Therefore, plants with small feedstock collection and product distribution areas, can be profitable. ■

For questions about this article, contact Sweet Gazoil Inc.
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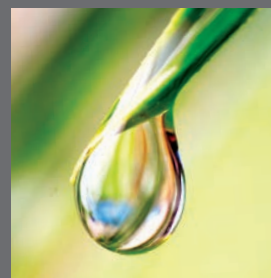
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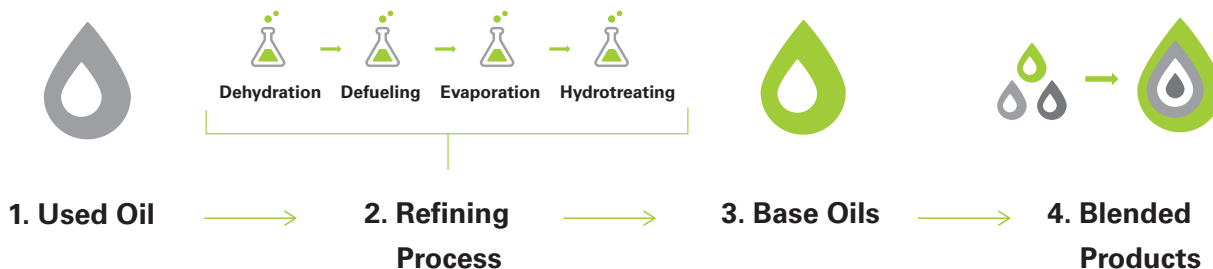
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