



CAUSTIC MANAGEMENT SERVICES



MERICHEM

CAUSTIC MANAGEMENT SERVICES

A RESPONSIBLE AND RELIABLE SOLUTION TO SPENT CAUSTIC HANDLING

Disposition of spent caustics, a product of caustic treating, requires safe, responsible handling to meet environmental requirements and avoid environmental liabilities and regulatory compliance violations. For over 60 years, Merichem has provided technical, economical, and environmentally responsible caustic handling solutions to the refining and petrochemical industries around the world.

Caustic treating is an effective, economical, and proven means of removing hydrogen sulfide, mercaptans, organic acids, and other impurities from hydrocarbons in the refining, petrochemical, and natural gas industries. And in Merichem's manufacturing plants, spent caustics are used either as feedstocks or as a substitute for other commercial products and thus do not constitute hazardous wastes.

CATEGORIES OF SPENT CAUSTICS

Merichem handles three categories of spent caustics: sulfidic, naphthenic and cresylic.

- **Sulfidic Caustics** typically include sodium sulfide, sodium hydrosulfide, and sodium mercaptides and are produced from caustic treating of fuel gas, liquefied petroleum gas (LPG) and gasoline as well as various hydrocarbon and gas streams in petrochemical and natural gas plants.
- **Naphthenic Caustics** are produced from the weak caustic washing of crude oil middle distillate fractions to remove the naturally occurring naphthenic acids. Sources include jet fuels, kerosene, diesel, furnace oils and lubricating oils.
- **Cresylic Caustics** are characterized by the presence of aromatic acid oils and typically are produced by caustic washing FCC heavy cracked naphtha streams. They are also produced in coal coking operations and synthetic fuel plants.

Below is an overview of a typical refinery operation illustrating the production of spent caustics from various hydrocarbon fractions.

SOURCE	STREAM	CAUSTIC PRODUCED
Crude Distillation Unit	Off Gas	Sulfidic Caustic
	Saturated LPG	
	LSR Naphtha	
	Kerosene	Naphthenic Caustic
Diesel		
FCC	Unsaturated LPG	Sulfidic Caustic
	Light FCC Naphtha	Cresylic Caustic
	Heavy FCC Naphtha	
Coker	Coker Off Gas	Sulfidic Caustic
	Light Coker Naphtha	

HOW WE USE YOUR SPENT CAUSTICS

If spent caustics are disposed of (or held with the intention of ultimate disposal), then they are considered waste materials. But when recycled as feedstocks to make a product, or used as a substitute for other commercially available products, these spent caustics are excluded from regulation as hazardous waste.

Spent caustics represent feedstocks for our two manufacturing plants. Our manufacturing facility at Greens Bayou in Houston, Texas, uses the cresylic caustics in the production of high purity cresylic acid and derivative products used in applications such as:

- Phenolic Resins
- Herbicides
- Wire Enamel Solvents
- Antioxidants

Our manufacturing facility in Tuscaloosa, Alabama, utilizes the naphthenic caustics in the production of a wide range of high quality naphthenic acids and derivative products used in a variety of applications such as:

- Tire Cord Adhesion Promoters
- Wood Preservatives
- Paint and Ink Driers
- Fuel Additives
- Metalworking and Lubricant Additives

Merichem's proprietary manufacturing process in Houston, Texas uses sulfidic caustic as a substitute for other commercially available chemical products such as caustic soda, sodium carbonate solutions and brine. Substitution for other commercially available products is also considered a non-waste by the EPA.

RECYCLING PROVIDES NON-WASTE STATUS

The U.S. Environmental Protection Agency (EPA) has recognized that the use of cresylic and naphthenic caustics as feedstocks to produce cresylic and naphthenic acids is a non-waste activity and therefore has excluded these spent caustic streams from the definition of hazardous waste.

Worldwide, spent caustics as they are used by Merichem are not wastes under the Basel Convention in that "disposal" does not include resource recovery recycling, reclamation, direct re-use or alternative uses of such materials.

DEPENDABLE, RISK-FREE HANDLING OF SPENT CAUSTICS

Merichem provides a unique service to the industry through our extensive transportation and terminalling infrastructure. Our years of experience and expertise are crucial in developing a supply chain model that meets your needs. We can safely and responsibly transport your spent caustics via tank truck, iso-container, rail car, barge, or ocean-going tanker to ensure you receive the most cost-effective solution.

We are available to answer any questions regarding your specific need in handling your spent caustics or other products produced at your facility. We look forward to working with you in developing a responsible and reliable solution in handling your spent caustics.

FIVE REASONS TO CONTACT US TODAY

- 1** – To have a more cost-effective means of handling your spent caustics.
- 2** – To minimize your spent caustic operating and permitting concerns due to environmental risks associated with regulatory compliance.
- 3** – To have a reliable outlet for handling your spent caustics.
- 4** – To have assurances that your spent caustics are handled in a responsible and lawful manner.
- 5** – To benefit from our superior technical service and spent caustic treating expertise.

For more information call us today at (713) 428-5027 or email us at causticservices@merichem.com.



5455 Old Spanish Trail, Houston, Texas 77023
Telephone: (713) 428-5027
Fax: (713) 926-3617
E-mail: causticservices@merichem.com
Website: www.merichem.com