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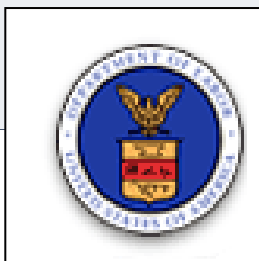
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Biodiesel News

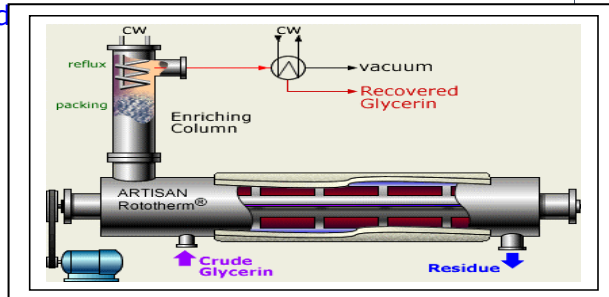


Biodiesel purity depends on source of vegetable oil/fat and type of manufacturing process. Photo below shows two different technologies yields different rates of Biodiesel. The clear red middle phase is biodiesel.



Glycerin purification

Glycerin purification and recovery system by [Artisan Rotothem®](#). Biodiesel manufacturer should look into recovery of Glycerin produced as a byproduct. This product is hazardous waste and is very expensive to dispose. If recovered product.



Glycerin Recovery System: This method is to use an [Artisan Rotothem®](#) mechanically-agitated thin film processor to continuously evaporate and distill glycerin and other heat sensitive solids-containing products, without color formation, while achieving greater than 96% yield. Owing to its extremely short residence time, narrow residence time distribution, rapid surface renewal, and high heat transfer rates, product degradation is minimized, while purity and yield are maximized. Vegetable oil containing 20% glycerin and 2% sodium salts, through continuous vacuum evaporation/distillation, highly purified glycerin is recovered overhead while a concentrated oil/salt residue is discharged as waste.

Methanol is a Class I flammable liquid and under EPA, triggers the Process Safety Management Plan

Unexpected releases of toxic, reactive, or flammable liquids and gases in processes involving highly hazardous chemicals have been reported for many years. Incidents continue to occur in various industries that use highly hazardous chemicals, which may be toxic, reactive, flammable, or explosive, or may exhibit a combination of these properties. Regardless of the industry that uses these highly hazardous chemicals, there is a potential for an accidental release any time they are not properly controlled. This, in turn, creates

the possibility of disaster.

On July 17, 1990, OSHA published in the *Federal Register* (55 FR 29150) a proposed standard, - "Process Safety Management of Highly Hazardous Chemicals" - containing requirements for the management of hazards associated with processes using highly hazardous chemicals to help assure safe and healthful workplaces.

HOW THE PSM STANDARD WORKS

This discussion summarizes the OSHA final process safety management (PSM) standard. The standard mainly applies to manufacturing industries - particularly, those pertaining to chemicals, transportation equipment, and fabricated metal products. Other affected sectors include natural gas liquids; farm product warehousing; electric, gas, and sanitary services; and wholesale trade. It also applies to pyrotechnics and explosives manufacturers covered under other OSHA rules and has special provisions for contractors working in covered facilities.

In each industry, PSM applies to those companies that deal with any of more than 130 specific toxic and reactive chemicals in listed quantities; it also includes flammable liquids and gases in quantities of 10,000 pounds (4,535.9 Kg) or more.

Subject to the rules and procedures set forth in OSHA's Hazard Communication Standard [29 Code of Federal Regulations (CFR) 1926.59(i)(1) through 1926.59(i)(12)], employees and their designated representatives must be given access to trade secret information contained within the process hazard analysis and other documents required to be developed by the PSM standard.

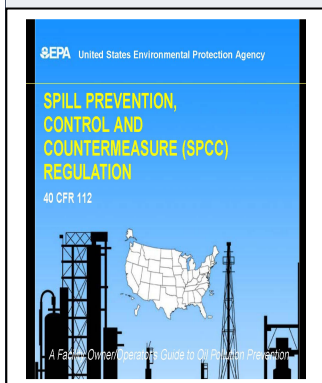
Biodiesel Manufacturing companies are required to prepare the PSM provided that they use equal or greater that 10,000 pounds of Methanol.

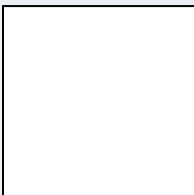
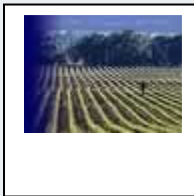
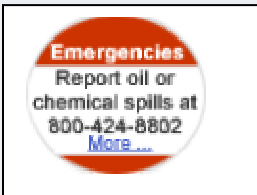
Aboveground Storage Tank (AST) Regulations for Flammable Petroleum Products including Methanol.

Two regulations are impacting Biodiesel Manufacturing Companies:

- 1) Spill Prevention and Control Plan
- 2) Article 79 compliance, National Fire Code

The EPA's SPCC plan as follows:





In July 2002, EPA amended the Oil Pollution Prevention regulation at Title 40 of the Code of Federal Regulations, Part 112, (40 CFR 112). The regulation incorporated revisions proposed in 1991, 1993, and 1997. Subparts A through C of the Oil Pollution Prevention regulation are often referred to as the "[SPCC rule](#)" because they describe the requirements for [certain facilities](#) to prepare, amend and implement Spill Prevention, Control and Countermeasure (SPCC) Plans.

What types of oil does the SPCC rule address?

The term oil means oil of any kind or in any form, including, but not limited to: petroleum; **fuel oil**; sludge; oil refuse; oil mixed with wastes other than dredged spoil; fats, oils or greases of animal, fish, or marine mammal origin; **vegetable oils, including oil from seeds, nuts, fruits, or kernels; and other oils and greases**, including synthetic oils and mineral oils.

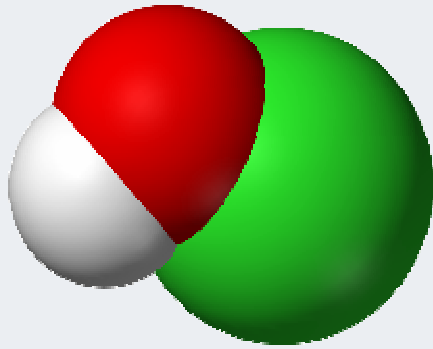
Under EPA's [Oil Pollution Prevention regulation](#), Biodiesel facilities must prepare and implement [spill prevention and control measures](#) in their SPCC Plans. A spill contingency plan is required as part of the SPCC Plan if a facility is unable to provide secondary containment (e.g., berms surrounding the oil storage tank).

Article 79 of California National Fire Codes Compliance as follows:

Methanol is classified as flammable liquid and manufacturer who uses single wall aboveground tank for storage, must acquirer local building and safety & fire department permit by installing emergency vent, vapor recovery system, P/V vent relief, 5- gallon fill spill bucket, foam suppression system, and adequate secondary containment.

EPA Registration of Biodiesel

EPA Registration and Health Effects Testing. All fuels and fuel additives must be registered with the US EPA and be subjected to the health effects regulations contained within 40 CFR Part 79. Companies must register their individual fuel products with the EPA in order to legally market the product to the public. In order to register their fuel, companies must either complete the health effects testing requirements using their specific fuel, or make arrangements with an entity which has completed the testing, in order to use the other entity's data. The National Biodiesel Board has completed the required health effects testing on behalf of the biodiesel industry, and has established criteria to make the testing data available to companies seeking to register their biodiesel with the EPA. Any fuel that does not meet ASTM D



6751 is not considered biodiesel and therefore does not fall under the NBB testing umbrella. Adoption of D 6751 by the FTA will assist EPA and the biodiesel industry in preventing unregistered fuels from being illegally sold as biodiesel.

EPA Biodiesel NewsEPA Award goes to Tuscola School

Region 5 has awarded a \$50,000 grant to the Tuscola Intermediate School District, Caro, Mich., to help retrofit school buses with diesel emission controls and to help buy biodiesel fuel for Tuscola and three other nearby school districts... Find alternative fuel stations near you that sell E85 or biodiesel.

Biodiesel fueling stations are building scores across America

Biodiesel fueling stations are sprouting like weeds across America, where production of the alternative fuel rose 66 percent in 2003. Experts say the rapid growth of the renewable fuel will stretch the country's tenuous petroleum supply while helping people breathe a little easier.

This newsletter is prepared by George Zoumalan, who is the chemical and compliance specialist of Ramtox.

For further questions, BQ-9000 Biodiesel ASTM D 6751 testing & certification, EPA registration, SPCC & PSM plans, permitting, and sales contract qualification package please contact George at 818-992-8981.