

# SAFETY ALERT



**Safety Alert No. 344**  
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## **Chemical Release due to Containment Failure**

On August 12, 2018, an operator reported, via the National Response Center, “a release of 70 gallons of emulsion breaker into the Gulf of Mexico due to equipment failure of a tank” from its unmanned platform. This chemical is nominally composed of 40% xylene, which equates to 196 lbs. by weight and meets the reporting requirements in 30 CFR 254.46. The chemical had been stored in a polyethylene tote.



*Location of storage tank (tank on left) at the time of the incident (left photo) and external view of the crack (right photo)*

### **BSEE investigated the spill and found:**

- The discharge was due to a crack along bottom area of the polyethylene tote (see photos).
- The interior of the tote’s walls showed dimples and reduced wall thickness throughout the fluid contact area.
- The tote was improperly labelled as containing “Corrosive” versus “Flammable” contents per the Safety Data Sheet.
- The secondary containment pan had filled with rain water and was incapable of retaining the totes contents.

- The chemical provider states that this emulsion breaker is shipped in 304/316 stainless steel totes and only should be contained in same or polyvinylidene fluoride or polyvinylidene difluoride (PVDF) totes.

#### **Conclusions:**

- The chemical was stored in an improper container, as polyethylene totes are incompatible with xylene. The degree of degradation/damage caused by improperly storing the emulsion breaker in the polyethylene tote and its role in the tote's failure of primary containment is not known, but is considered a contributing cause.
- The tote was exposed to sun/weather and had been in service for over five years. The exposure to UV/elements may have contributed to the tank's failure.
- There should be a means for removing rainwater from the secondary containment, allowing room to contain any chemical spillage.
- The tote was improperly labeled which could increase risks to personnel and the environment.

#### **Therefore, BSEE recommends that operators:**

- Ensure the compatibility of storage totes with the chemicals they are designated to store, in accordance with the safety data sheet (SDS);
- Properly label all chemical storage containers;
- Ensure all personnel are properly trained and fully understand the implications of the chemicals used on their facilities;
- Evaluate and inspect all chemical storage containers and supporting structures to ensure they are fit for continued service.

-- BSEE --

A **Safety Alert** is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding an accident or near miss. It also contains recommendations that should help prevent the recurrence of such an incident on the Outer Continental Shelf.