

Hot Oil Release and Fire

EPSC Learning Sheet September 2023



What Happened:

An oil sample from a heat transfer system was taken by opening a difficult to reach drain valve. The system at 10 bar and 250 °C released suddenly and vigorously hot oil above its flashpoint.

Ignition took place after 13 minutes when an operator without antistatic safety shoes & clothing tried to stop the release.

Difficult to access drain valve used for sampling



Aspects:

- It is good to regularly check the deterioration of oil in hot oil systems, as boiling point and flash point will be lowered over time.
- Sampling can be hazardous. It requires good design and approved procedures. Here neither were available.
- Emergency response must be well planned and executed, with the correct Personal Protective Equipment and clothing.
- Ignition sources must be well controlled in zoned areas. A human can carry sufficient electrical charge, that when discharged, can create a spark that ignites a vapor cloud.

Assure good design and safe sampling procedures for hazardous substances