Explosions caused by contaminated nitric acid – two case studies

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HNO₃ in Loss Prevention Bulletin

- LPB009: EtOH road tanker
- LPB074: Pump, Cu windings
- LPB116: Pump, ditto
- LPB124: Ar-NH₂ vapour
- LPB133: Lab waste
- LPB210: Tallow oil in tanker
HNO₃ in Loss Prevention Bulletin

- LPB210: Reactive chemical wastes

142 incidents

1 in 6 involved nitric acid – various unstable nitrations
1g C $\rightarrow$ min 540L gas at 1atm, 120°C…

…not counting NO$_x$
HNO$_3$  <  1 litre

+  

C$_{c}$H$_{h}$O$_{?}$...  $\sim$  100 g

$\rightarrow$  ...
For details of piped services etc. to Isoprobe refer to sketch no. 2752.
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Ruptured extraction ducting
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Door-stop ineffective
Nitric acid → Knock-out → Caustic (aq) + organics
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Acid + metal → hydrogen?
H₂S → SO₂ ... + a little S
K.O. sample pH ~11
Head space analysis by GC

Caustic sample

K.O. sample

20  25 minutes
Trace nitroaromatic detected in K.O. sample
References
