

# Hungary sludge flow an “ecological disaster”

Emergency crews are battling to contain a toxic mud spill that has killed at least four people and injured 120 others, in what is being described as Hungary's worst chemical disaster. The flow of red sludge was triggered when a dam at an alumina plant broke after days of heavy rain

Red sludge is produced during **Bayer Process** used to manufacture pure alumina from bauxite ore

## BAYER PROCESS

**1 Digestion:** Crushed bauxite ore is mixed with caustic soda to form slurry, then heated at high temperature to dissolve alumina content

**2 Clarification:** Impurities allowed to settle in thickening tanks as **red mud residue**, which is washed to recover caustic soda, then pumped to storage reservoirs. Residue contains heavy metals and is poisonous if ingested

**3 Precipitation:** Filtered solution passed to tall tanks. Seed crystals added, allowing alumina to crystallize and settle at bottom of tanks, where it is removed

**4 Calcination:** Crystals washed, then heated to over 1,000°C to form white alumina powder, which is cooled ready for storage and shipping

