

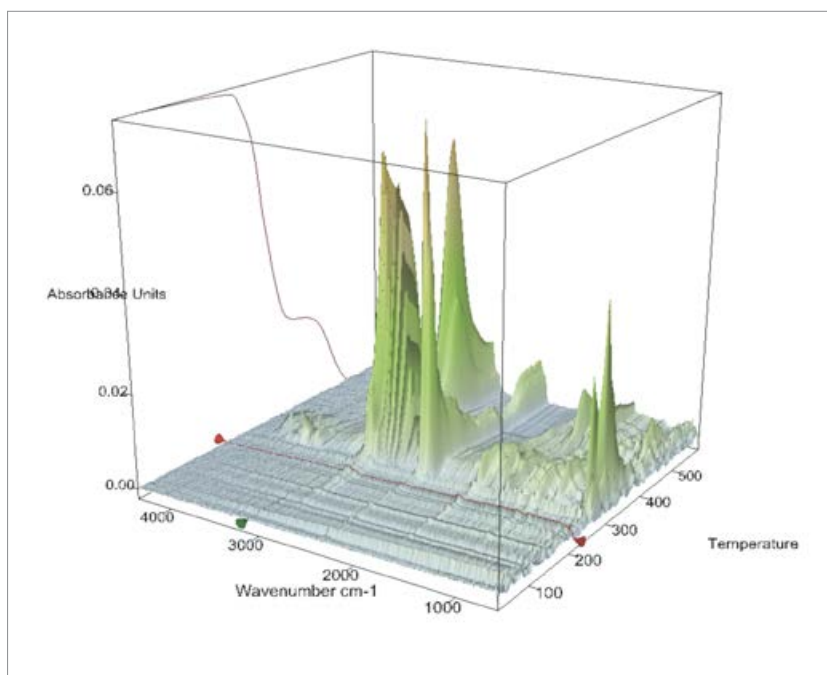
APPLICATION SHEET

ORGANICS – POLYMERS

POLYVINYL CHLORIDE

Polyvinyl chloride is a widely used plastic produced by polymerization of the monomer vinyl chloride. Globally, over 50% of PVC manufactured is used in construction. As a building material, PVC is cheap and easy to assemble. There are many uses for PVC including window profiles,

pipes, plumbing fixing, roofing membranes, flooring, and electrical cables. Other applications are i.e. in clothing, upholstery and magnetic stripe cards etc. The waste management of PVC is either done by recycling (mechanical, chemical), deposit or thermal by waste combustion.



Instrument

TG 209 **F1 Iris**® – FTIR

Test Conditions

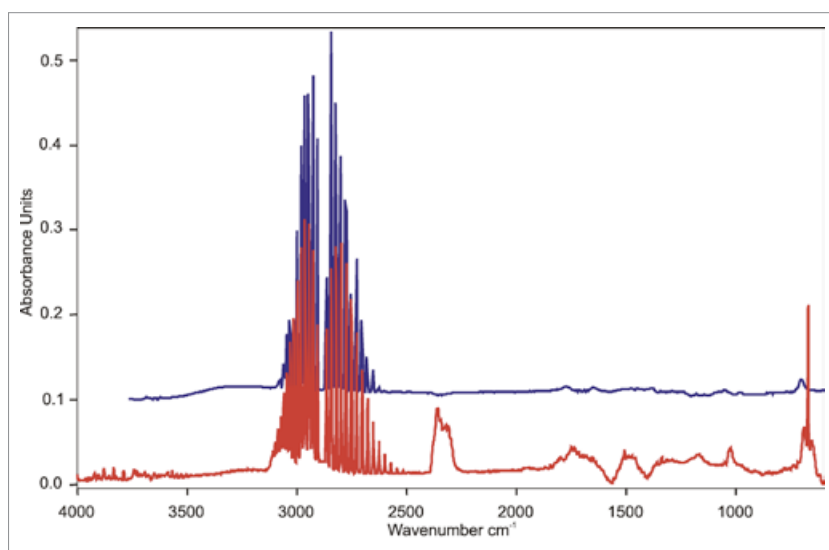
Temperature range	RT ... 1000°C
Heating/cooling rates	20 K/min
Atmosphere	Nitrogen at 40 ml/min
Sample mass	10 mg
Crucible	Alumina
Sensor	TG type Platinel

Results

PVC decomposes in two main TG steps (figure 1). During the 1st TG step, hydrochloric acid and chlorinated alkanes are the main decomposition products (figure 2, red =sample spectrum, blue = library spectrum of HCl). During the 2nd TG step, mainly chlorinated alkanes occurs. From the point of waste disposal by combustion, appropriate flue gas filters must be installed.

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