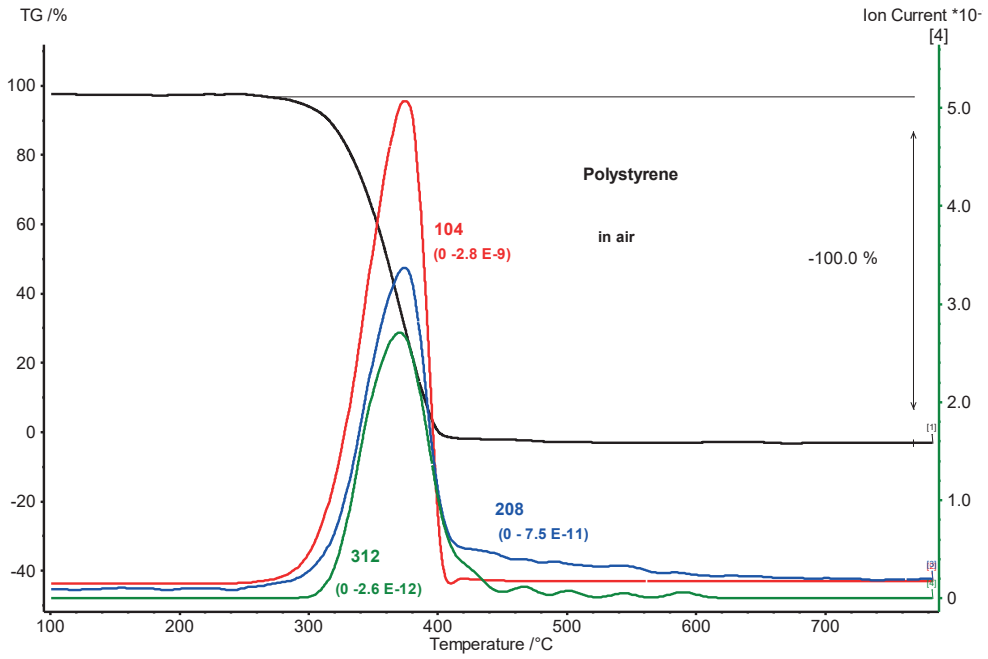
APPLICATION**SHEET**

Polymers · Polymer Manufacturing
STA 409 C - *SKIMMER*

Polystyrene

Introduction

Polystyrene (PS) is an amorphous and transparent thermoplastic, which is frequently used. Because of its chemical inertness, PS can be employed for food packaging. As PS foam (EPS or XPC), it is widely used as an insulating material in buildings because of the low thermal conductivity (0.02 - 0.04 W/m·K), easy handling and low price.



Test Conditions

Temperature range:	RT ... 900°C
Heating rate:	10 K/min
Atmosphere:	Air at 75 ml/min
Sample mass:	3 mg
Crucible:	Alumina
Sensor:	TGA-DSC type S

Test Results

During the combustion of PS in air atmosphere, decomposition products as benzene (not shown), styrene (104), dimer and trimer of styrene (208, 314), etc., were detected. Even these gaseous products might not be toxic enough to cause human death immediately, they can cause a long-term sickness and health problems. Styrene, for example, is classified as carcinogen and mutagen. Therefore the thermal waste management (combustion) should be performed with an excess of oxygen to guarantee that only CO_2 and H_2O are formed.

NGB · Application Sheet 077 · E · 2006 · Technical specifications are subject to change.

NETZSCH-Gerätebau GmbH
Wittelsbacherstraße 42 · 95100 Selb · Germany
Phone: +49 9287/881-0 · Fax: +49 9287/881505
at@netzsch.com · www.netzsch.com