

## LNG Carrier Cargo Insulation Polyurethane Foam System

이재춘, 권재근<sup>†</sup>, 박주홍  
KPX케미칼  
(jkkweon@kpxchemical.com<sup>†</sup>)

LNG(Liquefied Natural Gas) is becoming important energy source and demand of LNG is growing gradually because it is considered as one of the best environment-friendly fossil fuels. Therefore, development of LNG carrier is also attracted deeply in order to carry safely and economically with increase of importance of LNG. The most important part of LNG carrier is cargo containment system because it carries liquid which boiling point is  $-163^{\circ}\text{C}$ .

LNG carrier containment systems are divided into independent and integrated tank according to IMO classification. Rigid polyurethane foam is largely used for insulation material in the various LNG carriers. Glass fiber reinforced polyurethane foam is need to meet both thermal conductivity and mechanical strengths especially at the Mark III type LNG carrier. The lower thermal conductivity, the lower BOR(Boil Off Rate) which is directly related to efficiency of shipment of LNG.

We have developed LNG carrier cargo insulation polyurethane foam systems with various blowing agents such as HCFC-141b, LBA, HFC-245fa and water. We have been studying polyurethane foam system to improve thermal conductivity for low BOR.