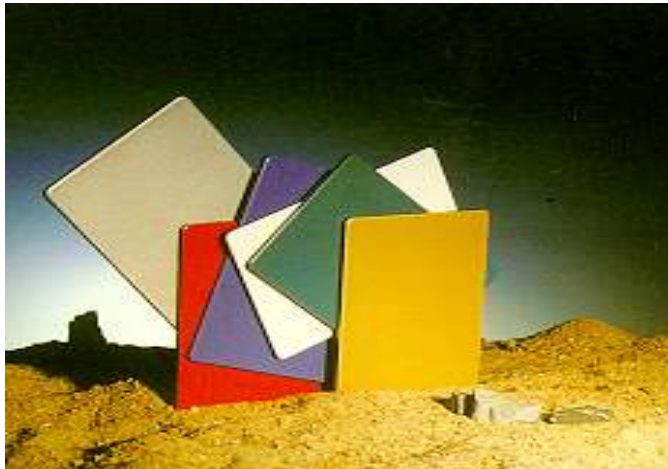


# **POLYGLUE®** for Alcopanel



**March 1996**

**Advanced Polymer Business**

**SK Corporation**

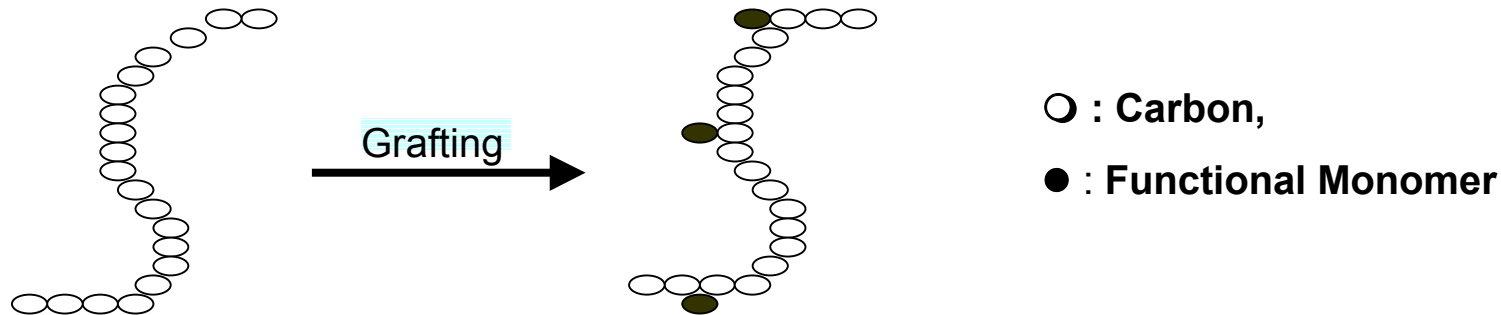
**ALCOPANEL**  
Aluminium Composite Panel



# 1. Polyglue - Introduction

The POLYGLUE is an adhesive resin developed by SK Corporation & Alcopanel on 1996. It is a modified polyolefin with functional groups to bond firmly to common polyolefins, polyamides, ethylene vinyl alcohol (EVOH), wood and metals. Since polyolefin itself have no functional groups, it does not adhere to other materials. However, SK Corporation & Alcopanel have succeeded in incorporating functional groups into the “POLYGLUE” to endow the outstanding adhesiveness to other materials without losing all the characteristic benefits of the polyolefin.

The POLYGLUE adheres strongly to gas-barrier resins and metals by thermal action and finds broad applications in the co-extruded bottle and metal powder coating.



# Characteristics

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## 1. Strong adhesion

POLYGLUE adhere to metals such as AL, steel and barrier resins such as EVOH, Nylon etc strongly by thermal reaction. And it bonds to PE or PP by its polyolefin characteristics also.

## 2. Durability

Composed of polyolefin and having strong adhesion to substrates, POLYGLUE serves high durability. It's durability enables for composite pipe to be used in hot & cold water pipe lining (e.g. floor heating pipe)

## 3. Simple and easy processing

It is useful in pellet form for use conventional extrusion equipment designed for polyolefin processing. Based on PE & PP that is thermoplastic, process condition of POLYGLUE is similar to common polyolefin.

# Adhesion Mechanism

- **Epoxy** : Epoxide, Amino & Hydroxy group (  $-\text{NH}_2$  ,  $-\text{OH}$  )
- **Nylon** : Amino group (  $-\text{NH}_2$  )
- **EVOH** : Hydroxyl group (  $-\text{OH}$  )
- **Metal** :  $-\text{OH}$  group of oxidized surface(ionic), Hydrogen bonding

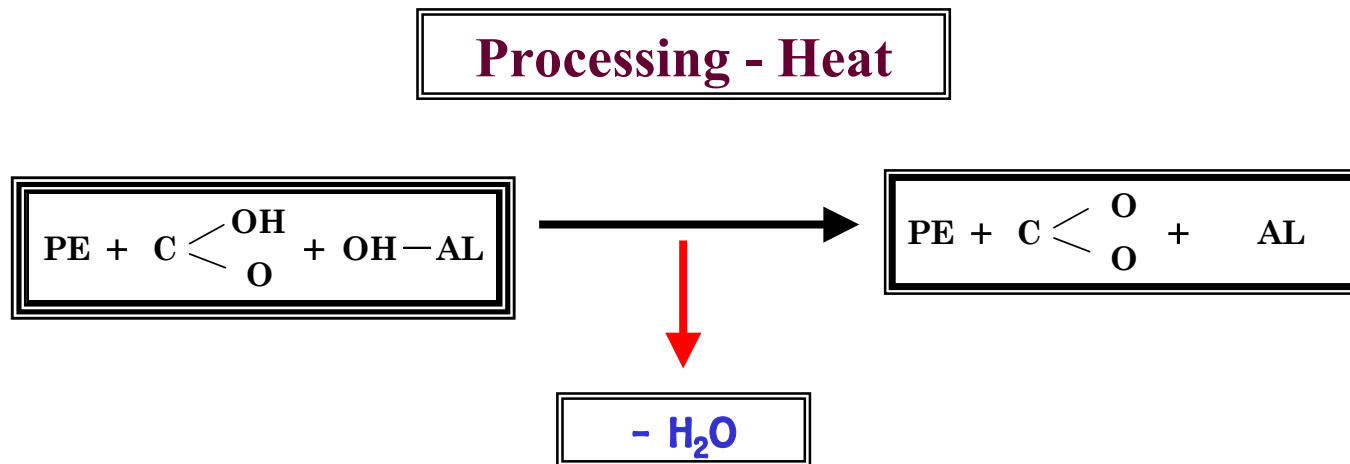
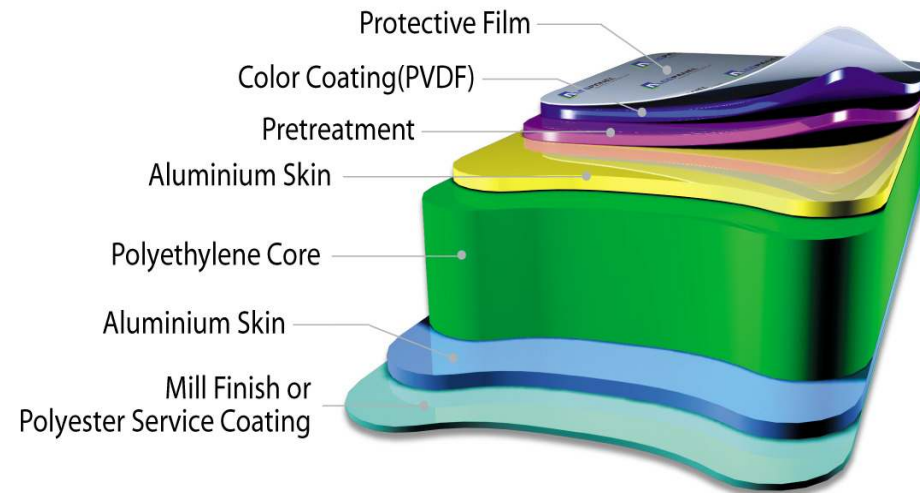
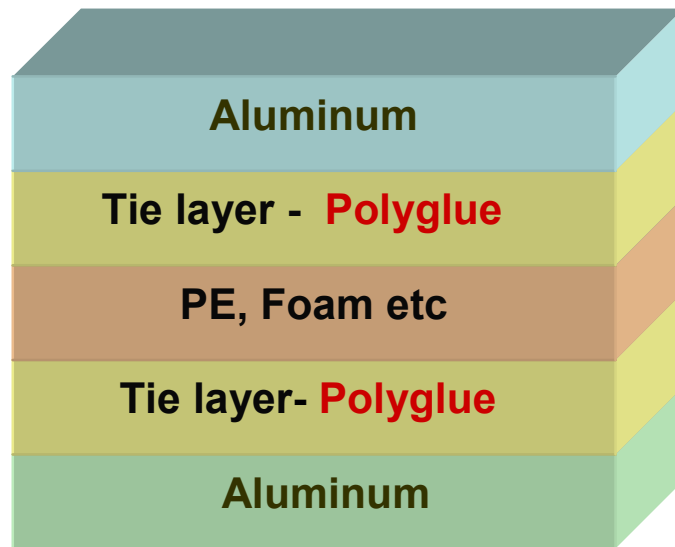


Figure 1. Ionic bond between Metal and Adhesive PE

## 2. Polyglue for Alcopanel

**Grade : LE149V**

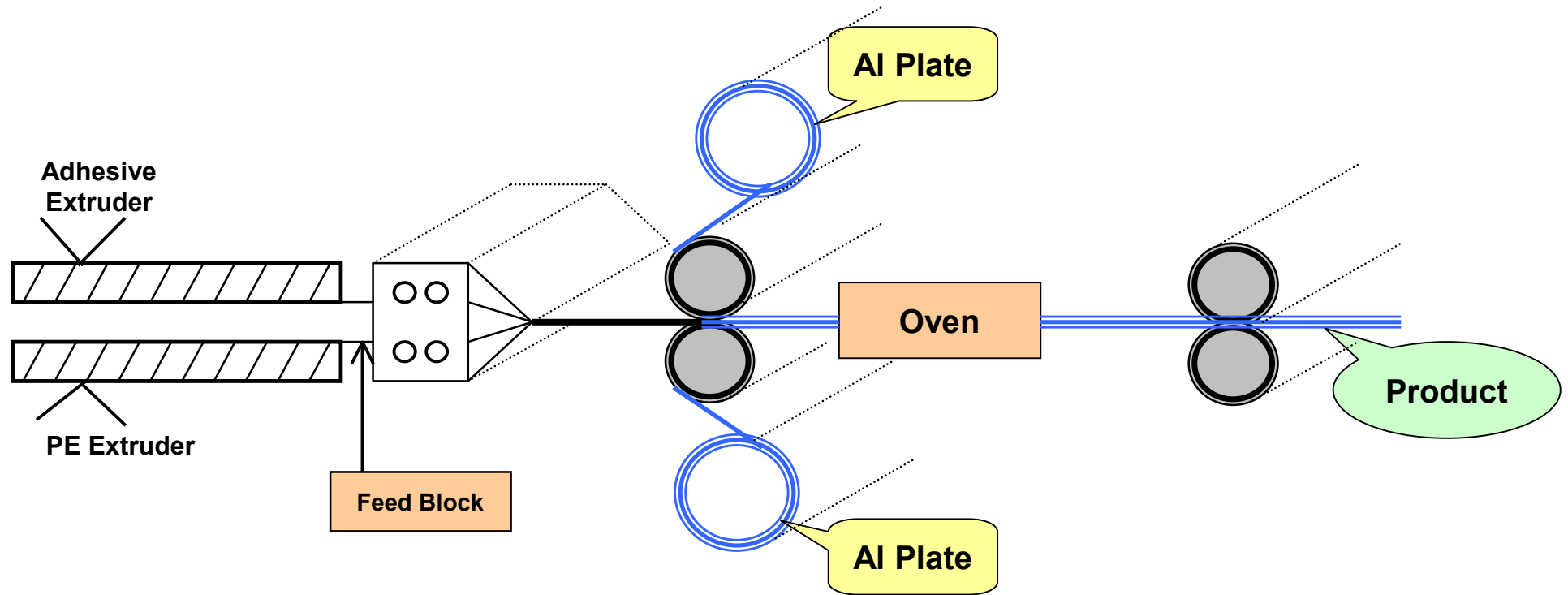
**Application: exterior decoration panel for construction**



# Physical Properties

Physical properties	Unit	LE149V	VE750S
Melt Index (190℃)	dg/min	1.6	2.8
Density	g/cm <sup>3</sup>	0.921	0.941
<b>Tensile strength at break</b>	<b>kg/cm<sup>2</sup></b>	200	110
Ultimate elongation	%	850	550
Hardness	Shore D	48	32
Vicat softening point	℃	102	70
Water absorption	wt %	<0.01	<0.01
Brittleness temperature	℃	<-70	<-70
Melting point	℃	121	86,121
Remark		Co-extrusion	Laminating

# Process - Co-extrusion Type (Grade: LE149V)



# Quality Control

ISO 9001 (1994)

ISO14001 (1996)

KOLAS (1999) : Korea Laboratory Accreditation Scheme

