

# Solvent-free / Water-based Adhesives

## ▶ Characteristics

### WA series (water-based PUD adhesives)

- A self-emulsifying polyurethane dispersion (PUD), exhibiting excellent stability/heat-resistance/hot-water resistance without using any surfactants for dispersion
- Two-component reaction curing adhesives (or three-component, according to application)
- Applicable to general plastic films/foaming materials (except aluminum foil)

### X series (100% solid adhesives)

- Two-component reaction curing adhesives, developed for lamination process
- Free from drying process
- Our two-component (or three-component) reaction curing adhesives conform to Food Sanitation Act in Japan
- Having excellent adhesion to various plastic films; also capable of providing some adhesives (XE/XC series) applicable to aluminum foil/transparent vapor deposition film
- Excellent surface wettability on plastic film, and applicable to roll coating for thin film
- Requiring exclusive laminating machine (solvent-free laminator) and supplying machine capable of mixing as specified compounding ratios, because of high viscosity (or solid) at room temperature

- ◆ We would like to emphasize that both WA series and X series require the compatibility with laminating machines as mentioned above. Please contact us, if you have any inquiries about custom-made products compatible with your machines.

## ▶ Representative Products

### Water-based adhesives Main component

Product name	Non-volatile component (%)	Viscosity (mPa·s/25°C)	Hardener used (representative)	Compounding ratio (weight ratio)	Application and characteristics
WA-377-2	40	5~200	C-96	18 : 1	For industrial use
			C-24	18 : 1 : 1	For industrial use
			C-96	18 : 18	
WA-515LV	39	10~2,000	C-24	100 : 5	For industrial use, Moisture / heat-resistance
WA-568	40	10~1,000	C-24	100 : 5	For industrial use, High crystallinity
WA-470-2	50	100~6,000	C-24	100 : 5.5	VOC-free , Flexible

### Hardener

Product name	Non-volatile component (%)	Viscosity (mPa·s/25°C)	Application and characteristics
C-24	100	2,000~3,000	Isocyanate
C-96	100	400~1,000	Non-isocyanate

### Solvent-free adhesives

Main component (NCO)	Viscosity (mPa·s)	Hardener (OH)	Viscosity (mPa·s)	Application and characteristics
XC-233	500-900(80°C)	XA-126	350-700(70°C)	For flexible packing materials, High adhesion/flexibility
XC-234	300-600(80°C)	XA-124	550-1,100(80°C)	For flexible packing materials, High-speed processability
XC-235	700-1,400(80°C)	XA-129	100-300(40°C)	For flexible packing materials, General purpose, High sealing strength
XE-261	4,000-6,000(80°C)	XC-151	1,800-3,600(25°C)	For flexible packing materials, For boiling retort pouch

Compounding ratio (weight ratio), Main component : Hardener = 10 : 4

## ▶ Application

- Adhesives for various food packaging films
- Adhesives for various flexible packaging films

