



# ALKYD EMULSIFIER



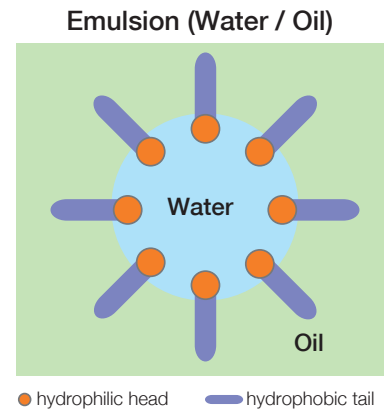
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# ALKYD EMULSIFIER

## ES-EAGLE 4045 TECHNOLOGY

**ES-EAGLE 4045, Alkyd Emulsifier** reduces the cost of solvent-based alkyd coatings while maintaining quality. It uses a new technology allowing water to replace VOC components by volume.

**ES-EAGLE 4045, Alkyd Emulsifier** allows the addition of up to 50% water into solvent-based alkyd paints without any additional raw materials or process change. This recent technology uses mechanical energy to break the water into fine, stable micelles, enabling the formation of a water-in-oil emulsion, that remains reducible with mineral spirits and other alkyd solvents.



## ADVANTAGES

- Significant cost savings, by increasing resultant paint volume
- Easy to apply, as all formulation procedures are performed as usual without any complicated calculations
- Economic, as it represents 0.3-1% of the total formulation
- For pre emulsion we recommend 1.5% to 2.5% of water content
- Achieves better performance, in terms of better whitening ,gloss, opacity and rehology
- Helps satisfying the VOC regulation, by substituting the amount of solvents by water
- Maintains the ability to dilute the resulting coating with mineral spirits and other alkyd solvents

## PROPERTIES

Viscosity @23°C	200-600 cP @ sp3 / rpm 20
Density @23°C	Approx 1.25 kg/l
Solid content	45 ± 2%
Color	Dark Brownish-Greenish color

## RECOMMENDED RESINS

**LA-EAGLE(SWZ64-5/70) 80%**

**LA-EAGLE(VWZ64-9/70) 80%**

**LA-EAGLE(SW65-4/60) 75%**

**LA-EAGLE(SW64-65/70) 70%**

- **It is highly preferable** to use ES-EAGLE 4045 with low viscosity resins
- **For low VOC, low viscosity paints**, it is recommended either to reduce the water content below 25% or to use LA(SW65-4/60)75%



# ALKYD EMULSIFIER

## FORMULATION PROCEDURE

### Grinding Stage:

It is performed as usual

### Let Down Process:

1. Add the rest of the alkyd
2. Add ES-EAGLE 4045 to vortex created and mix well
3. Replace percent of solvent by water, added in shots
4. After complete addition of water keep the system at high speed for 30 minutes
5. Adjust the viscosity with white spirit or any type of alkyd solvents



## GUIDE FORMULATION

Raw Material	Standard without ES 4045	Modified with ES 4045	Remarks
LA-EAGLE (SW64-65/70) 70%	150.00	150.00	Long alkyd resin
Benton 34 paste	10.00	10.00	Rehology modifier
Dispersing agent	1.50	1.50	
<b>Mix well for 3 minutes</b>			
TiO <sub>2</sub>	150.00	150.00	
<b>Grind with high speed for 20-30 minutes</b>			
LA-EAGLE (SW64-65/70) 70%	350.00	350.00	
ES-EAGLE 4045	0.00	7.00	Eagle alkyd emulsifier
<b>Mix well before water addition</b>			
Water	0.00	245.00	
<b>Add water shots at high speed and keep system mixing for 20 minutes</b>			
Zr (12%)	6.18	6.18	
Ca (10%)	5.62	5.62	
Co (10%)	2.25	2.25	
MEKO	3.05	3.05	Anti skinning agent
White spirit	221.40	68.00	Solvent
NALZIN FA179		1.40	Flash rust inhibitor
TOTAL	900.00	1000.00	
Required white spirit to adjust viscosity	0.00	130.00	

**N.B.:** The guide formulation above, passed storage stability test at oven with no pigment settling and no water separation layer

## PAINT SPECIFICATIONS

Raw Material	Standard without ES 4045	Modified with ES 4045	Remarks
Yield K.gm	900	1130	
Density kg/l	1.033	1.027	Pycnometer
Viscosity ± 1min	3:00 min.	3:00 min.	Cup ford 4
Viscosity sp.5/rpm.4 ± 200 cP	500 cP	500 cP	Brookfield
Opacity	96	96	Sheen spectro
Whiteness	75.5	77.7	Sheen spectro
Gloss 1 week	86.4	87	Sheen spectro
Hardness 1 week	26	27	Pendulum hardness
Touch dry	10 min.	< 5min.	Simex drying time
Take free	1:30 hr	1:15 hr	Tester
Hard dry	4:30 hr	4:25 hr	
Through dry	24:00 hr	24:00 hr	
VOC g/l	445	340	

**Recommended for:** LOW PVC gloss paints





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