Xytu® CZ-12
Coalescing Agent

1 Product Information

Product name	Ester Alcohol 12 (C12 alcohol ester)
Chemical name	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate
Brand manufacturer	Nanjing Xinyi Synthesis Technology Co., Ltd.
CAS number	25265-77-4
Chemical formula	$C_{12}H_{24}O_3$
Molecular weight	216.3

2 Key Technical Data

Appearance	Colorless, clear, homogeneous liquid, free from suspended matter and sediment
Color (Pt-Co scale)	≤15
Active content	≥99.0% (w/w)
Acid value	≤0.5 mg KOH/g
Water content	≤0.1% (w/w)
Density (20 °C)	0.945-0.950 g/cm³
Boiling point	Approximately 252 °C
Refractive index (20 °C)	1.441-1.443
Evaporation rate (nBAc=1)	<0.001

3 Key Product Features

Environmental compliance: Meets non-VOC regulatory requirements in the EU, China and other regions, with low toxicity and biodegradability.

Excellent hydrolytic stability: Compatible with various emulsions, including high-pH pure acrylic emulsions, without phase separation or loss of effectiveness during long-term storage.

Effective film formation: Absorbed by latex particles, it softens the particles and promotes their fusion during paint application, enabling effective coalescence without being absorbed into porous substrates.

Good compatibility: Easily incorporated into latex systems without impairing coating stability even at relatively high dosages. It can improve coating rheology and pigment wetting.

Improved film performance: Helps improve film hardness, prevent film cracking, and significantly enhance scrub resistance, film compactness and gloss.

Good low-temperature performance: With a freezing point as low as -50 °C, no special antifreeze treatment is needed in winter. It addresses cracking and chalking problems encountered when applying waterborne coatings at low temperatures in autumn and winter.

4 Applications

An efficient coalescing agent for waterborne coatings, mainly for the following applications:

- Interior latex paints and exterior architectural coatings.
- Waterborne industrial coatings and wood coatings.
- Waterborne inks and other fully waterborne emulsion systems, including pure acrylic, styrene-acrylic, vinyl acetate-acrylic, silicone-acrylic and waterborne polyurethane systems.

5 Directions for Use

Recommended dosage: Adjust within 3%-10% based on emulsion solids. The dosage may be increased appropriately for hard emulsions or low-temperature application, up to a maximum of 12% based on emulsion solids, without affecting emulsion stability.

Addition: In principle, add directly under stirring at any stage of paint production. If gelation occurs during addition, premix the product with water from the formulation and a small amount of surfactant before adding it to the emulsion system.

Optimization: Adding the product in two portions makes full use of its wetting, dispersing and foam-suppressing effects and improves pigment dispersion uniformity.

6 Packaging Storage and Transportation

Packaging: Normally supplied in 200 kg drums. Some channels offer smaller 25 kg and 50 kg packs. Samples are available for trials.

Storage: Keep sealed in a cool, dry, well-ventilated warehouse away from ignition sources and direct sunlight. Warehouse temperature should not exceed 30 °C. Store separately from strong alkalis and strong acids. Provide spill-response equipment and absorbent materials in the storage area.

Shelf life: 24 months in the factory-sealed packaging at ambient temperature.

Transportation: Transport as a general chemical. Vehicles must carry appropriate firefighting and spill-response equipment. Protect from intense sunlight, rain and high temperatures during transport, and keep away from ignition sources and hot areas. Bulk transport in wooden or concrete vessels is prohibited.

7 Safety Information

This product is classified as non-hazardous, with low toxicity and low odor. Standard chemical-protective gloves are nevertheless recommended during handling. Avoid direct contact with skin and eyes. In case of accidental contact, rinse immediately with plenty of running water and seek medical attention if necessary.