Industrial Coatings

Technical Data Sheet

Tinuvin® 5100

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Product Description

Tinuvin® 5100 is a liquid, non-basic aminoether (NOR) hindered amine light stabilizer (HALS) developed especially to give high durability to exterior industrial and decorative coatings. It is specifically designed and manufactured for coatings where a low basicity, non-interacting and high value stabilizer is required. Based on amino-ether functionality, its low basicity reduces possible interactions with acidic paint components such as curing catalysts. Its high efficiency provides significant improvement of coating performance by minimizing paint degradation that causes cracking and gloss reduction of clear coats as well as chalking and fading of pigmented paints.

Key Features & Benefits

- Liquid amino-ether (non-interacting) HALS
- Minimizes interaction with acidic materials such as acid catalysts and acidic pigments
- Improves coating resistance to cracking and loss of gloss by scavenging free radicals

Properties

Typical Propertiess

Appearance	yellow to brown liquid
Viscosity at 20 °C	3,700 – 5,200 cps
Density at 20 °C	0.97 g/cm^3
Solubility at 20°C (g/100 g solution)	Tinuvin® 5100 is miscible to more than 50% with most commonly used paint solvents such as xylene, EGA, BGA, MPA, MEK, Solvesso® 100 (ExxonMobil Chemical) and white spirit. Water solubility is less than 0.01%. Its liquid form allows emulsification into some waterborne systems particularly Alkyd emulsions.

These typical values should not be interpreted as specifications.

Applications

Tinuvin® 5100 inhibits the photo-oxidation of binders to improve the resistance of coatings to surface erosion (retarding loss of gloss and chalking in pigmented coatings, avoiding cracking and loss of gloss in clear coatings). It helps maintain properties such as flexibility, adhesion and water repellency. Tinuvin® 5100 improves the durability of exterior industrial, architectural and decorative coating systems.

In clear coats and light pigmented formulations, synergistic protection against coating and substrate discoloration and degradation is obtained when Tinuvin® 5100 is associated with UV absorbers.

Tinuvin® 5100 is recommended for applications such as:

- General industrial coatings
- Heavy duty maintenance and marine coatings
- Plastic coatings, gel coats and composites
- Architectural and decorative coatings
- Wood coatings and treatments
- Waxes, polishes, car care products
- Coil coatings

Due to its low basicity, Tinuvin® 5100 does not interact with acidic paint components such as curing catalysts, metal driers, certain pigments and fillers, additives, or resins with high acid values or generating acids upon degradation such as vinylic or chlorinated resins. In general the compatibility with halogenated biocides used in wood stains and architectural coatings is not an issue but should be pre-tested.

Tinuvin® 5100 eliminates cure retardation in oxidative drying alkyds in contrast to more basic HALS. In amine-catalyzed systems, Tinuvin® 5100 does not reduce pot life or create storage stability problems, as may basic HALS.

Tinuvin® 5100 is recommended for paint systems based on:

- Acid catalyzed Alkyd and Polyester/Melamine resins
- Metal drier catalyzed long oil Alkyd and Alkyd/Acrylic systems
- Vinylic resins (PVC plastisols, PVC copolymers, chlorinated resins)
- Two-pack, isocyanate-free systems (i.e. epoxy-carboxy based binders)
- Wood and architectural coatings
- Radiation curable formulations containing acidic adhesion promoters

The amount of Tinuvin® 5100 required for optimal performance should be determined in trial series covering a concentration range.

Recommended concentrations

1 – 3% Tinuvin® 5100 in pigmented systems

1 – 2% Tinuvin® 5100 + 1 to 3% Tinuvin® 99-2 or Tinuvin 1130 in clear coats over light sensitive substrates, or lightly pigmented coatings susceptible to fading or discoloration.

(concentrations are based on weight % on resin solids)

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet Tinuvin® 5100.

Important

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