ISO-9002 registered company

OXXIDES, INC.
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SPECIFICATION

ANTIMONY PENTOXIDE

Textile Finishes
Complex textile finishes often contain additives such as softeners, anti-soil agents, anti-static agents and cross-linkers, and are beyond the scope of these guidelines.

Compounding Information
OXXIDES A3015 and A5015 aqueous dispersions are supplied at approximately pH 5 and, in nearly all applications, should have the pH adjusted before compounding with any latex. This adjustment assures full utilization of the colloidal particles without agglomeration or latex destabilization. Follow the latex manufacturer's recommendations for the optimum pH. Neutralize using ammonium hydroxide, which will volatilize during the drying and curing of latex film. Please note: Never add OXXIDES A5015 directly to a latex, but dilute to 40% Sb_2O_5 or less. It is essential to dilute either the OXXIDES dispersion or the latex with as much water as is practical before mixing these ingredients.

Neoprene-type or PVDC latices often recommend avoiding the use of ammonia. A 15% solution od sodium hydroxide can be used or use OXXIDES A4015, which is neutralized with sodium hydroxide.

OXXIDES A3015: Typical latices require an approximate pH of 9. This will require approximately 1/2 kilogram of 28% ammonium hydroxide to 10 kilogram of A3015. Add with good mixing.

OXXIDES A5015: Dilute with water to 40% Sb_2O_5 or less, then neutralize with ammonium hydroxide.

OXXIDES A4015: As an alternative, we recommend OXXIDES A4015, a 40% pentoxide dispersion which is neutralized with sodium hydroxide.

Storage and Handling
OXXIDES antimony pentoxide sols should be stored in a cool dry area. Shelf life is guaranteed for one year. Mixing in the drum may be necessary if the product is stored for an extended amount of time. See the Material Safety Data Sheet for specific Handling recommendations. Please note that these products should be protected from freezing. Should the product freeze, thaw material and re-mix before use.

Packaging	Size	Weight
A3015	55 gallon drums / 208 litters	600 pounds net / 272 kilograms net
A4015	30 gallon drums / 113 litters	375 pounds net / 170 kilograms net
A5015	30 gallon drums / 113 litters	450 pounds net / 204 kilograms net

An ISO 9001:2000 company

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SPECIFICATION

ANTIMONY PENTOXIDE

AQUEOUS DISPERSIONS OF COLLOIDAL ANTIMONY PENTOXIDE
FLAME RETARDANT ADDITIVES

OXXIDES, Inc. offers aqueous colloidal antimony pentoxide as a synergist with halogenated flame retardants in textiles, adhesives, coatings and water-based systems.

Advantages Over Conventional Antimony Trioxide
- Better penetration of the substrate.
- Less pigmenting or whitening effects for deep mass tone colors.
- Easier handling and processing. Liquid dispersions will not clog spray guns.
- Easy compounding; no special dispersing equipment required.
- High FR efficiency for minimal added weight or change in hand.

Products
OXXIDES, Inc. A3015, A4015, A5015 are water-based dispersions of nano-sized (10^{-9}) antimony pentoxide used with halogenated flame retardants to increase their efficiency when used in flame retardant treatments of materials such as a textiles, nonwovens, adhesive latices, and coatings.

Typical Properties:	**A3015**	**A4015**	**A5015**
Antimony pentoxide expressed as Sb_2O_5	29%	38%	48%
pH	5	8	5
Viscosity in centipoise	5	5	10
Specific Gravity	1.37	1.60	1.81

Formulating Guidelines:
The total amount and ratio of flame retardants needed depend upon the severity of the test requirements and the material being treated. In most cases, optimum flame retardant performance in a halogen/ antimony system is attained when the halogen and antimony are used at 3:1 mole ratio. Exceptions are PVC and PVCD latices which contain high levels of chlorine, so we recommend the antimony pentoxide to be added to your formulation until the complete system passes the required flame test.

Formulation Example
This simple FR application for the finishing of nonwoven polyester fiber padding for automotive interiors consists of a “hard” PVC latex, OXXIDES A5015, water and some ammonia solution: To 10 parts OXXIDES 5015, add 40 parts water with sufficient ammonia to bring the p11 to 9, mix the water and the A5015, add 50 parts PVC latex.
These ingredients are mixed, sprayed onto nonwoven padding, and heat cured.

Continued on page 2