



Vacsol™ Azure LOSP Wood Preservative

Arch's global wood protection business is comprised of operating companies in a number of countries and supply many wood protection products throughout the world including copper based, boron based, azole based and other preservatives in a range of carrier mediums including water, emulsion and various solvent systems. One of our products, Vacsol™ Azure, an advanced LOSP (Light Organic Solvent Preservative) wood preservative treatment is supplied by Arch Wood Protection (NZ) Ltd, to customers in New Zealand and Chile for the protection of certain primed wood products such as siding and trim boards marketed in the USA. The preservative consists of three carbon based active ingredients: fungicides tebuconazole and propiconazole, along with an insecticide / termiticide permethrin and water repellent agents (resin / wax) all dissolved in a common solvent (white spirits). The treatment takes place in modern industrial facilities and the process itself is highly controlled, ensuring the products are consistent and safe for immediate use when they arrive in the market.

The active constituents (tebuconazole, propiconazole, permethrin) are carbon-based materials and are thoroughly impregnated within the treated wood products. These constituents are widely used around the world in numerous formulations for protection of building and construction timber, millwork and joinery and many other wood products in residential and other end uses against decay and termite attack.

The carrier solvent is known as white spirit, or sometimes Stoddard solvent. White spirits is a mixture of hydrocarbons distilled from crude oil (analogous to gasoline, kerosene, diesel). White spirits is assessed as having a low order of toxicity and is contained in many common household and industrial products such as interior and exterior paints, stains, sealants, thinners, grease cutters, dry cleaning fluid, and construction adhesive products.

The Vacsol™ Azure preservative from Arch Wood Protection (NZ) Ltd is United States EPA registered (Registration no's. 075101-1). To gain EPA registration the preservative supplier must complete and submit toxicity and environmental impact data which supports the proposed use. LOSP type preservatives have been used in Europe, Australia and New Zealand for over 40 years and have a proven track record as effective treatments for timber. The most recent versions such as Vacsol™ Azure incorporating azole type active constituents are extensively used in New Zealand, Australia, Chile and elsewhere for the protection of siding boards, joinery & millwork, structural timber and engineered wood products.

Arch Wood Protection is aware that misleading and inaccurate assertions have been made in the US market regarding alleged hazards to users or owners of Vacsol™ Azure LOSP treated wood products. Arch Wood Protection categorically refute these irresponsible assertions. We can also assure you that alarmist claims of adverse experiences with some preservatives used overseas are equally misleading and are not relevant to the Vacsol™ Azure LOSP treated wood products being supplied in the USA. As Arch affiliate companies supply many types of wood preservative products in many countries through-

out the world, we are in a position to assure users and homeowners that there is no known significant adverse effect from using Vacsol™ Azure LOSP treated wood products providing that basic common sense hygiene measures are taken, all of which are equally applicable when working with normal untreated timber.

How are VACSOL™ AZURE LOSP Treated Board Products Produced ?

The treatment process is done under carefully controlled conditions in a special enclosed vacuum/pressure impregnation plant to ensure thorough penetration of preservative and treatment of the wood products. The process is designed to ensure required penetration and loading of the active constituents, with the use of a minimum amount of solvent. Immediately after treatment the wood products contain approximately 5% by weight of the white spirits based treatment fluid. The retention of the active constituents which have been shown to provide the long term protection against decay and termites is based on this fluid uptake and is in accordance with relevant New Zealand, Australian and other codes.

The next stage of the production process is to allow excess solvent to evaporate out of the boards in a carefully controlled conditioning stage to ensure correct application and adhesion of the primer coating. During this stage the solvent levels in the wood are reduced to less than 1.7% by weight prior to priming. The remaining solvent fraction in the wood after priming is of low volatility and effectively remains in the boards permanently.



Vacsol™ Azure LOSP is ideal for the treatment of certain types of manufactured wood products because:

1. The treatment is non-swelling and does not affect wood moisture content, allowing fully finished, machined wood products to be preservative treated.
2. It provides superior dimensional stability and water resistance, as proprietary water repellents and waxes are also incorporated into the solution
3. It minimizes the production of preservative treated waste by eliminating the need to machine treated boards after treatment
4. The active ingredients in Vacsol™ Azure LOSP treatment are insoluble in water and fix well to wood. Therefore they are resistant to leaching if the wood is exposed to water due to paint failure, cracking, peeling, damage, etc.

By comparison, spray-on water based treatments typically achieve far less penetration, and effectively only “envelope” treat the piece of wood. Pressure treatment with a water-based preservative would require a second drying cycle, and the machining would generate quantities of treated waste.

In order to impart superior weather resistance and convenience for the user, the product is pre-coated with two applications of a premium acrylic or alkyd wood primer. The primer coatings are cured under controlled conditions for a minimum of 24hrs prior to over coating or final packaging. The final result of this production process is durable and weather resistant premium building products that are safe and easy to use.

Working With Primed LOSP Treated Board Products

When first purchased, a slight residual odor of white spirits can sometimes still be detected. This will dissipate rapidly once the pack is opened and the product is exposed to fresh air. These boards do not off-gas hazardous residues and there have been no reported harmful health effects from the white spirits contained in Vacsol™ Azure LOSP treated boards.

The odour threshold for white spirits is quite low, and vapours can be detected at levels of less than 1 ppm in air. The American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (Time Weighted Average – 8hrs) for occupational exposure to white spirits vapour is 100 ppm in air. Measurements taken at the production facilities in the atmosphere immediately around treated

boards at the final handling and packaging stage indicate levels <10ppm. Likely levels of any white spirit vapour in USA distribution, sales, and building sites will be further reduced, but the odour may still be detectable with fresh boards. The World Health Organisation comprehensively examined the risk to human health and the environment from exposure of white spirits in 1996. The report states that while white spirit has low acute toxicity by inhalation, skin contact or ingestion, users of paints or cleaners incorporating the whole solvent may gain exposure above recommended levels in poorly ventilated environments. Arch concludes that potential exposure to white spirits from normal handling of these treated wood products will be many times less than the recommended exposure limit and very unlikely to have any adverse health effects.

Vacsol™ Azure treated wood products can be used indoors with confidence although normally base boards, door trims and other interior uses are not weather exposed and do not require preservative treatment. The slight residual odour might be noticeable at first in enclosed spaces, however once installed, painted and finished in interior installation there should be no perceptible odour.

As when working with all timber and wood based materials, always use a filter mask when machining or cutting wood products to avoid the inhalation of fine air borne wood dust. Protect the eyes while machining or any operation where flying particles may be ejected. Wash hands after work and before meal or toilet breaks.

Dress all end-cuts and rebates with an approved zinc or copper naphthenate based end sealing product. For full installation and maintenance procedures consult the product manufacturer's instruction manual.

Summary of Vacsol™ Azure LOSP Treated Board Products

Vacsol™ Azure LOSP treated wood products are safe to use and live with and will provide decades of outstanding service on your home, free of decay and termite attack. We would like to stress that Arch Wood Protection and our customers are committed to supplying environmentally responsible and non-harmful treated wood products. We will not compromise the health and safety of our customers or employees.

Reference:

1. White Spirits, Environmental Health Criteria 187, 1996. World Health Organisation, Geneva. 1996.

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