PRODUCT DATA SHEET

X-LANCE®

PRODUCT DESCRIPTION

X-Lance®, an insecticide sold by ISK Biocides, Inc., contains Permethrin. X-Lance is compatible with most water-borne anti-sapstain treatments, including Premier®, Sta Brite® P, PQ-8®, PQ-80®, NeXgen®, and Tuff-Brite®. When used according to label directions on freshly-felled logs and lumber, wood-inhabiting insects will be controlled or eliminated.

BEETLE IDENTIFICATION, HABITAT, AND BIOLOGY/LIFE CYCLE

Anobiid Powderpost Beetles

Description: There are a large number of anobiid beetles that attack seasoned wood in the United States. These beetles range in size from less than 1/16-inch to over 5/16-inch long. They have highly variable body forms, but they almost all have a “bell shaped” first body segment (pronotum) that hides the head when viewed from above.

The furniture beetle is 3/16- to 1/4-inch long, cylindrical, and red-brown to dark brown in color. The last three segments of their antennae are longer than the first eight combined. The larvae are gray-white and 1/4-inch long. The last spiracle is not enlarged as it is in the lyctids.

The adult deathwatch beetle is a little longer than 1/4-inch and is gray-brown with yellow, scale-like hairs on the back of the body. Deathwatch beetle larvae are 7/16-inch long when mature, with tiny spines on the surface of the first eight abdominal segments.

Biology: Furniture beetle adults emerge in the spring from cells just below the surface of the infested wood. Soon afterward, mating followed by egg laying takes place. The female lays the oval, pearl-like eggs in old emergence holes or cracks and crevices in the wood. Eggs hatch in six to 10 days, and the larvae feed for about one year before pupating for two to three weeks. These insects infest both hardwoods and softwoods. The larvae normally follow the grain of the wood when feeding and fill their tunnels with cigar-shaped pellets of chewed wood.

Deathwatch beetles get their name from the adults’ habit of tapping their heads against the surface of the wood they are infesting. These beetles cannot infest wood unless it has been partially digested by fungi; therefore, this beetle is most often found in poorly-ventilated areas where the wood moisture is high. They prefer hardwoods such as oak. These beetles create large, “bun-shaped” pellets in their galleries.

Bostrichid Powderpost Beetles

Description: The bostrichid beetles range from 1/8- to 1-inch in length and normally have an enlarged prothorax (first body segment), which gives them a hump-backed appearance. The head of these beetles usually points straight down and is hidden from view by the large prothorax. Most bostrichids have a roughened thorax, and their short antennae usually end in three or four enlarged segments.

The black polycaon is totally unlike the majority of the bostrichids. It is 7/16- to 7/8-inch long, coal-black with a prominent head that points straight out from the thorax. It has an oval prothorax featuring coarse holes. The wing covers have small holes.

The lead-cable borer is a more typical bostrichid. It is a cylindrical, brown, black, or red-brown beetle with red mouthparts, legs, and antennae. The eight-segmented antennae have the last three segments greatly enlarged. The head is concealed by the hood-like prothorax, which has many puncture-like holes in the front half.

Biology: The black polycaon is found mainly in the far Southwest and Pacific Coast states. These beetles prefer to infest softwoods. The lead-cable borer is most common along the Pacific Coast. The female bores into wood to form an egg gallery, as do all bostrichids. The female inserts eggs into pores in the wood as she moves in and out of the egg tunnel. The eggs hatch in about three weeks, and the larvae feed on the wood for the next nine months. They

bore parallel to the grain, filling their tunnels with meal-like frass. The pupal stage lasts two weeks, but the new adults stay in the tunnel for four to six weeks before emerging. The adults chew their way out of the gallery and begin the life cycle all over again.

Lyctid Powderpost Beetles

Description: There are several other species in the family Lyctidae, besides those named, that infest seasoned hardwoods. Adult lyctid beetles range in size from 1/16- to 5/16-inch long. They are red-brown to brown or black in color with an easily-seen, prominent head. The 11-segmented antennae are each tipped with a two-segmented club. The tibiae, which are the fourth leg segments, have prominent spurs.

The larvae are tiny "C"-shaped grub-like larvae that are found feeding in tunnels in the wood. They are usually less than 3/16-inch long, with an enlarged first body segment (prothorax) and eight spiracles (breathing holes) in the abdomen. The last spiracle is very large compared to the others. These larvae have three-segmented antennae and three-segmented legs.

Biology: Lyctid powderpost beetles infest seasoned hardwoods including oak, hickory, ash, mahogany, and bamboo. They can re-infest the same piece of wood until it is reduced to a shot-hole-riddled shell filled with frass the consistency of face powder. The adult females lay their eggs soon after mating, deep within the pores of these hardwoods. The larvae feed on the wood, the suitability of which is determined by its starch content. They prefer recently-dried wood and will not infest wood with less than three percent starch content. Total development may take two to four years, but it is not unusual to have two generations per year in the South.

BEETLE CONTROL

Always read and follow label instructions. Independent tests have proven that the three major beetle types, Lyctic sp., Anobiid sp., and Bostrichid sp. (ambrosia type beetles) can be eliminated and/or adequately controlled using X-Lance at a dilution rate of 1:800 in water (0.05% permethrin). These studies, conducted on non-beetle infested logs and freshly-sawn lumber dipped within 24 hours of manufacture, indicate complete mortality of beetles within 72 hours of treatment at rates of 1:800 or stronger.

X-LANCE APPLICATION TECHNIQUES

The most common method of applying insecticides is in combination with an anti-stain in a dip immersion. All surfaces should be treated in order to ensure control. As a rule of thumb, remove bundles when air bubbles stop coming from between the layers of boards.

TYPICAL USE RATES

Dilution rate will depend on handling of lumber, environmental factors, and biological stress. Less active ingredient is needed per board foot when the risk of beetle infection is small.

Smooth-surfaced lumber normally retains half as much insecticide solution as rough cut wood and hence needs a stronger concentration than Base Strength to deposit the necessary amount of fungicide.

DOSAGE

INFECTION CONDITIONS	DIP VAT	CROSS-THE-CHAIN VAT
Low	1:1000	1:1000
Moderate	1:700	1:700
High	1:400	1:400

MONITORING SOLUTION STRENGTH

X-Lance is not known to strip from the tank during the treating of freshly-sawn lumber; however, work solutions can be checked from time to time by sending samples to the ISK Biocides, Inc. technical department located at our facilities in Memphis, TN. Contact your sales representative for assistance.

AGITATION

It is good practice to agitate your working solution no matter what product is being used. This product can be easily agitated in bulk dip vats or in other application equipment. Agitation is best achieved by use of propeller-type mixer (available from ISK Biocides Inc.). For best results, always make up the desired solution strength in a pre-mix tank and agitate well before adding to the work solution.

HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN

Do not handle until all safety precautions have been read and understood. See product label and Safety Data Sheet for hazards and precautions.

Observe good personal hygiene practices. Change protective gloves/clothing when signs of contamination appear.

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Mix contents before using. Do not allow to freeze.

For product emergency, call Chemtrec at 800-424-9300

TECHNICAL DATA

PHYSICAL DATA		INGREDIENTS	
Appearance:	Amber Liquid with mild petroleum odor	Permethrin	36.8%
Specific Gravity:	1.039 @ 68° F.	Inert Ingredients	63.2%
Weight/Gallon:	8.65 lbs/gallon @ 68° F.		100.0%
Flashpoint:	111° F. - PMCC		

WARRANTY AND LIMITATION OF DAMAGES

Seller warrants to those persons lawfully acquiring title to this product that at the time of the first sale of this product by seller this product conformed to its chemical description and that it was reasonably fit for the purposes stated on the product label when used both in accordance with the Directions for Use appearing on the product label and under normal conditions of use. Buyers and users of this product assume the risk of all loss or damage from use or handling of this product that results from their failure to read and comply with the Directions for Use of this product, which appear on the product label. SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY, AND NO AGENT OF SELLER IS AUTHORIZED TO DO SO. Unless expressly prohibited by state law, the liability of seller for any breach of warranty shall not exceed the purchase price of the product as to which a claim is made.

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