



# MATERIAL SAFETY DATA SHEET

HCFC-Free  
**"GREEN"**  
 Polyiso Roof Insulation

**SECTION 1: Product and Company Information**

PRODUCTS: **ACFoam® Nail Base**  
**ACFoam® CrossVent™**  
**ACFoam® CrossVent™ RB**

**PRODUCT DESCRIPTION AND USE:**

Rigid foam insulation panels for installation as delivered over sloped roof decks. Nail Base consists of a closed-cell polyisocyanurate foam core bonded on one side to a glass fiber reinforced felt facer and a minimum 7/16" oriented strand board (OSB) wooden layer on the other side for nailing. CrossVent™ products have vent spacer strips of polystyrene foam separating the foam board from the OSB. CrossVent™ RB has a foil radiant heat barrier adhered to the underside of the OSB.

MANUFACTURER: Atlas Roofing Corporation  
 2000 River Edge Parkway, Suite 800  
 Atlanta, Georgia 30328  
 Phone: 770-952-1442

**HEALTH AND TECHNICAL CONTACTS:**

From 8:00 AM to 5:00 PM (respective time zone); call one of the following numbers for the location closest to you:

Camp Hill, Pennsylvania	800-688-1476	LaGrange, Georgia	800-955-1476
East Moline, Illinois	800-677-1476	Phoenix, Arizona	800-477-1476
Northglenn, Colorado	800-288-1476	Diboll, Texas	800-766-1476
Etobicoke, Ontario, Canada	888-647-1476		

In the event of a chemical emergency after 5:00 PM and on weekends, call CHEMTREC at 800/424-9300 or, in Canada, CANUTEC at 613/996-6666.

**SECTION 2: Composition and Ingredient Information**

COMMON NAME	CHEMICAL NAME	WEIGHT % IN ARTICLE‡	CAS NUMBER
Oriented-strand board	wood with phenol-formaldehyde adhesive	87	None
Polyiso foam, containing: Residual blowing agent	isocyanurate homopolymer	9.3	None
	normal pentane	< 0.6	109-66-0
Felt facers (composite of wood pulp and glass fibers), containing:		2.5	None
Fiberglass	continuous filament glass fibers	0.25	65997-17-3
Pigment	carbon black	0.125	1333-86-4
<i>(the following occur only in CrossVent products)</i>			
Polystyrene foam, containing: Styrene (residual)	styrene homopolymer	1.2	9003-53-6
	styrene monomer	< 0.1	100-42-5
Residual blowing agents	normal pentane; isopentane;	< 0.1	109-66-0;
	cyclopentane		78-78-4; 287-92-3

‡Weight % based on 1-inch thickness of polyiso foam in CrossVent.

### SECTION 3: Hazard Overview

No unusual conditions are expected from this product. Freshly expanded or heated foam may off-gas some pentane-blowing agent, which is heavier than air and may accumulate to ignitable concentrations if stored inside a sealed container or within confined areas. Ignitable atmospheres have concentrations that exceed inhalation exposure limits for workers, further reinforcing the need for ventilation when foam is freshly expanded.

With the exception of the blowing agent, Atlas foam roofing products do not present an inhalation, ingestion, or contact health hazard unless subjected to operations such as sawing, sanding, or machining that result in the generation of airborne particulates (dusts). Exposure to high dust levels may irritate the skin, eyes, nose, throat, or upper respiratory tract. Inhalation of high amounts of dust over long periods may overload lung clearance mechanisms and make lungs more vulnerable to respiratory disease. [See Section 6 of this MSDS for other health information and exposure limit standards for product ingredients.]

Canadian users: LD50 and LC50 data are listed below for those constituent(s) that are available.

	LC50	LD50	Hodge & Sterner classes	
	mg/(m <sup>3</sup> air)	mg/(kg body wgt)	(inhalation)	(oral)
Pentanes	364,000 (rat, inh, 4hr)	446 (mouse, i.v.)	relatively harmless	insufficient data
Styrene	11,800 (rat, inh, 4hr)	316 (mouse, oral) 1000 (rat, oral)	practically non-toxic	slightly toxic
Formaldehyde	400 (mouse, inh, 2hr)	42 (mouse, oral) 100 (rat, oral)	moderately toxic	moderately toxic

### SECTION 4: Fire and Explosion Hazard Data

The product is a solid article that will burn if exposed to an ignition source of sufficient heat and intensity, or open flame, such as a welder's torch. It should be installed with a 15-minute thermal barrier between it and the structure's interior. Under certain fire conditions, combustible gases can be generated, creating rapidly spreading, high-intensity flames and dense, black smoke. Burning of this product can produce irritating and potentially toxic fumes and gases, including carbon monoxide and carbon dioxide; other undetermined hydrocarbon fractions could be released in small quantities.

Flashpoint: Not applicable (product is not a liquid).  
 Auto-ignition temperature: 400°- 500°F for wood; not determined for foam ingredients.  
 Extinguishing media: Water spray/fog, CO<sub>2</sub>, dry chemical (consider media appropriate for surrounding materials).  
 Respirator for fire fighting: Self-contained breathing apparatus (SCBA).

Pentane vapors may be emitted from freshly produced foam or when product is heated. Pentane concentrations between the lower and upper explosive limits (LEL and UEL) may accumulate under unique circumstances inside a sealed container or within confined areas. If such concentrations are provided a source of ignition, there may be a very high rate of flame propagation.

Pentane:	Flashpoint	≤ -37°C	Vapor pressure	= 514 mm Hg at 25°C
	Boiling point	= 28 to 49°C	LEL	= 1.5% (35,000 mg/m <sup>3</sup> )
	Vapor density	= 2.49	UEL	= 708%

These products contain wood products. Sawing, sanding, or machining wood products may generate wood dust. Wood dust is a strong to severe explosion hazard if a dust "cloud" contacts an ignition source. An airborne concentration of 40 grams of dust per cubic meter of air is often used as the LEL for wood dust. Partially burned dust presents a special fire hazard if dispersed into the air. Remove burned or wet dust to open area after fire is extinguished.

## SECTION 5: Reactivity Data

Stability:	Stable. Service temperature range: -100 to 250°F. To prevent structural deterioration, avoid contact with acetone, methyl ethyl ketone, tetrahydrofuran, chlorine, chloroform, hydrogen peroxide, ethylene dichloride, dimethyl sulfoxide, and dimethyl formamide.
Hazardous Decomposition Products:	None identified.
Hazardous Polymerization:	Will not occur.

## SECTION 6: Health Hazard Data

Primary Means of Exposure:	Inhalation of particulates
Secondary Means of Exposure:	Eye and skin contact with particulates and inhalation of vapors

### INHALATION HEALTH HAZARDS:

#### *For OSB and wood pulp fiber (generated dust)*

- Acute: Wood dust may cause nasal dryness, irritation, coughing, headache, and sinusitis. The pieces of wood in OSB are bonded together with phenol-formaldehyde resin, which may contain small quantities of residual formaldehyde. Formaldehyde can cause temporary irritation to the nose and throat.
- Chronic: Repeated exposures (even below 5 mg/m<sup>3</sup>) to certain wood dusts, such as western red cedar, can be allergenic for some sensitive individuals. OSB used in this product is made from southern yellow pine and other species to which most individuals are not sensitive. Formaldehyde is a probable human carcinogen. Prolonged or repeated breathing of OSB dust should be avoided. If dermatitis, asthma, or bronchitis develops, it may be necessary to remove the sensitized worker from further exposure to OSB dust. Workplace exposure limits are provided in table below.

#### *For continuous filament glass fibers in felt facers (generated dust)*

- Acute: Airborne fragments of glass fibers may cause mechanical irritation of the upper respiratory tract, particularly mouth, nose and throat; glass dust may cause transient irritation of the upper respiratory tract. Workplace exposure limits are provided in table below.
- Chronic: No chronic health effects are known to be associated with exposure to glass fibers. Results from epidemiological studies have not shown any increase in respiratory disease or cancer. The International Agency for Research on Cancer has classified continuous filament fiberglass "Not Classifiable as to Carcinogenicity to Humans" (Group 3).

#### *For polyiso foam (generated dust and residual vapor) and carbon black in felt facers (generated dust)*

- Acute: Dust may cause transient mechanical irritation of the upper respiratory tract. Workplace exposures to residual pentanes from this product are expected to be below levels of any health risk. Overexposure to high concentrations of pentane can cause narcotic effects. Signs and symptoms of overexposure to pentane include headache, nausea, dizziness, difficulty walking, or sleepiness. Studies have shown that short-term (10-minute) exposures to pentane concentrations as high as 5,000 ppm (11,750 mg/m<sup>3</sup>) produced no symptoms. Workplace exposure limits are provided in table below.
- Chronic: There is no evidence that dusts generated from polyiso foam or felt facers cause disease in humans. Facer dusts containing carbon black pigment are not analogous to the raw carbon black powders for which human carcinogenicity is suspected. No chronic effects are known for exposures to pentane vapor.

#### *For polystyrene foam strips (generated dust and residual vapors)*

- Acute: Dust may cause transient mechanical irritation of the upper respiratory tract. In addition to the residual blowing agent that is similar to that used in polyiso foam, polystyrene foam also contains trace concentrations of residual unpolymerized styrene. Workplace exposures to residual styrene from this product are expected to be below levels of any health risk. Workplace exposure limits are provided in table below.

Chronic: There is no evidence that polystyrene foam dust causes disease in humans. No chronic effects are known for exposures to pentane, isopentane, or cyclopentane. The styrene monomer residual is classified by the UN's International Agency for Research on Cancer as "possibly carcinogenic to humans" (Group 2B).

**AIRBORNE EXPOSURE LIMITS:**

Constituent or Category	OSHA PEL	ACGIH TLV	NIOSH REL
	(mg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(mg/m <sup>3</sup> )
Nuisance dusts NOS containing no asbestos and <1% crystalline silica	15 TWA total 5 TWA respirable	10 TWA	NA
Fiberglass dust	See nuisance dusts	5 TWA	NA
Wood dust	See nuisance dusts	1 TWA (hardwoods) 5 TWA (softwoods)	NA
Formaldehyde	0.9 TWA 2.5 STEL	0.4 TWA	0.02 TWA 0.12 STEL 25 IDLH
Carbon black	3.5 TWA	3.5 TWA	3.5 TWA 1750 IDLH
Styrene	425 TWA 850 Ceiling	85 TWA 170 STEL	215 TWA 425 STEL 3000 IDLH
n-Pentane	2950 TWA	1410 TWA	350 TWA 1800 Ceiling 3525 IDLH
Isopentane	See n-pentane	See n-pentane	See n-pentane
Cyclo-pentane	NA	1722 TWA	1720 TWA

NA=not applicable

**EYE CONTACT HEALTH HAZARDS:**

Acute: Mechanical irritation, redness, tearing, and blurred vision can occur if dusts generated from glass fibers, OSB, and foams come into contact with eyes.  
Chronic: None known.

**SKIN CONTACT HEALTH HAZARDS:**

Acute: Direct contact with rough-cut foam or OSB can cause mechanical abrasion cuts or puncture to fingers, hands or exposed skin.  
Chronic: None known.

**SIGNS AND SYMPTOMS OF EXPOSURE:**

Irritation of the upper respiratory tract, eyes, and/or skin.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**

Any condition generally aggravated by mechanical irritants in the air or on the skin. Specific data are not available which address medical conditions that are generally recognized as being aggravated by exposure to this product.

**CANCER-CAUSING POTENTIAL**

**WARNING! This Product Contains a Chemical Known To The State of California To Cause Cancer.**

The warning above is provided in accordance with the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

#### FIRST AID PROCEDURES

Inhalation: Remove to fresh air. Drink water to clear throat and blow nose to remove dust.  
Skin: Wash with soap and cool running water.  
Eyes: Flush eyes with running water for at least 15 minutes. Do not rub or wipe eyes. If irritation persists, consult a medical professional.  
Ingestion: Product is not intended to be ingested or eaten. If product is ingested, irritation of the gastrointestinal tract may occur, and should be treated symptomatically. Do not induce vomiting. Rinse mouth with water to remove particles, and drink plenty of water to help reduce the irritation. [No chronic effects are expected following ingestion.]

*Note to Physician: This product is a mechanical irritant. Some individuals may have an allergic response. It is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.*

### **SECTION 7: Workplace Precautions and Control Measures for Safe Handling and Use**

Ventilation: Store in a dry, well-ventilated area. Assure storage containers or areas and shipping containers are adequately ventilated. No Smoking—No Matches—No Lighters—No Welding rules should be enforced. Install according to manufacturer's recommendations.

Installation Procedure: Cutting of product should be done in a manner to reduce or control generation of airborne dusts, from both the foam layer(s) and the OSB. Avoid unnecessary dust exposures when cutting or abrading by using adequate local or general ventilation. Avoid dust contact with ignition sources. Handle product using good industrial hygiene and safety practices.

Respiratory Protection: If respiratory tract irritations occur or if any dust exposure limit is exceeded, use a respirator such as 3M Model 8271 or Model 8210, or equivalent for protection against nuisance dusts. When normal ventilation is provided to work area, no respiratory protection is needed for pentane vapor.

Protective Clothing: To avoid skin irritation from excessive dust generated during cutting operations, wear long-sleeved, loose fitting clothing, long pants, and gloves.

Eye Protection: Goggles or safety glasses with side shields are recommended.

Work Area Cleanup: Pick up large pieces; do not wash down drain. Sweep or vacuum smaller pieces into a waste container for disposal. If needed, use water spray to wet down and minimize dust generation. Do not dry sweep dust accumulation or use compressed air for cleanup.

Hygienic Practices: Exposed skin areas should be washed with soap and cool water after working with product. Clothing should be laundered separately from other clothes.

### **SECTION 8: Releases to the Environment and Waste Disposal**

Do not discard residues into sewers, storm sewers, or surface waters. If accidentally released to a water body, material will float and disperse with wind and current; contain the material with booms and remove either manually or with a vacuum truck.

If accidentally released to land, scoop up material and put into suitable container for disposal.

Chemicals in this material are not expected to cause harm to aquatic or terrestrial plants or animals; however, fish or other animals may eat the product, which could obstruct their digestive tracts.

Be a good steward of the environment and clean up residues (some components of the product are not biodegradable).

This product, if discarded as supplied, is not considered a hazardous waste under RCRA (40 CFR 261) and may be placed directly into receptacles that will transport the waste to a municipal waste, industrial waste, or demolition waste landfill. If contact with a contaminating substance alters the material, it is the user's responsibility to determine at the time of disposal whether it meets RCRA criteria for hazardous waste. Dispose in accordance with federal, state and local regulations.



## SECTION 9: Additional Regulatory Considerations

Transportation Regulations: This product is not regulated as a hazardous material in transportation.

TSCA: All chemicals in this product are listed on the TSCA Inventory. TSCA 12(b) export notification requirements do not apply to this product.

SARA TITLE III: There is no Section 302 extremely hazardous substance in this product. Reporting requirements do not apply to this product. [Diisocyanate precursors do not remain in the polymer foam of this product.]

The OSB in this product meets the HUD Formaldehyde Emission Standard, 24 CFR 3280, in that it does not emit more than 0.3 ppm free formaldehyde vapor when tested in accordance with ASTM E1333.

All chemicals and component categories found on state lists (e.g. wood dust, Minnesota) are addressed in this MSDS.

This product has been classified in accordance with the hazard criteria of Canada's *Controlled Products Regulations* and the MSDS contains all of the information required by said regulations. All chemical components are on Canada's Domestic Substances List (DSL). The product is not a controlled product and no components on Canada's Ingredients Disclosure List (IDL) exceed threshold concentrations. Product information has been volunteered in a form consistent with Canada's Workplace Hazardous Material Information System (WHMIS).

NFPA / HMIS Rating: Health= 1 Flammability= 1 Reactivity= 0

## SECTION 10: Physical/Chemical Characteristics

The following applies to the product (article), not to pure forms of individual constituents of the product:

Appearance : Nail Base - White or cream-colored foam solid with a dark gray fiber-reinforced facing on one side and a minimum 7/16" OSB board on the opposite side.

CrossVent - White or cream-colored foam solid with a dark gray fiber-reinforced facing on one side and a minimum 7/16" OSB board on the opposite side, with polystyrene foam vent strips separating the OSB from the foam.

CrossVent RB - White or cream-colored foam solid with a dark gray fiber-reinforced facing on one side and a minimum 7/16" OSB board on the opposite side, with polystyrene foam vent strips separating the OSB from the foam. OSB has a radiant foil barrier on the side that is facing the foam board.

PROPERTY	PROPERTY
Boiling Point (°F): NA	Specific Gravity: <1
Melting Point (°F): >250	Solubility (Water): Insoluble
Vapor Pressure: NA	Vapor Density (Air=1): NA
Percent Volatile By Volume: <1	Evaporative Rate: NA
pH: NA	Odor: Negligible

NA=not applicable

Prepared by: Atlas Roofing Corporation