

# SAFETY DATA SHEET (SDS)

HCFC-Free

## SECTION 1: Identification

PRODUCT(S) IDENTIFICATION:

### Mule-Hide Poly ISO 2-GF

Article Name: Rigid polyisocyanurate foam panels  
CAS Number: None Assigned  
Common Name: Rigid Foam Insulation



PRODUCT DESCRIPTION AND USE:

Rigid foam insulation panels for installation as delivered over roof decks. Consists of a flat or tapered closed-cell polyisocyanurate foam core bonded on each side to heavy cream-colored coated glass filament facer. The thickness of the foam ranges from 0.5 to 4.5 inches. Typically specified for mechanically attached single ply, cold-applied BUR and cold-applied modified bitumen membrane system roof coverings.

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

SUPPLIER: Mule-Hide Products Co., Inc.  
1195 Prince Hall Drive  
Beloit, WI 53511  
Phone: 800-786-1492

MANUFACTURER 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 800-955-1476	800-688-1476	LaGrange, Georgia
East Moline, Illinois 800-477-1476	800-677-1476	Phoenix, Arizona
Northglenn, Colorado 800-766-1476	800-288-1476	Diboll, Texas
Etobicoke, Ontario, Canada	888-647-1476	Delta, British Columbia, Canada 855-267-1476

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

## SECTION 2: Hazard(s) Identification



EMERGENCY OVERVIEW:

	Health	Fire	Reactivity	Degree of Hazard
HMIS Rating	1	1	0	0 - Minimal (insignificant)
NFPA Rating	1	1	0	1 - Slight 2 - Moderate 3 - Serious (high) 4 - Severe (extreme) 5 - Chronic Health Effort(s)

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 3 of this SDS for other exposure limit standards for the product ingredients.]

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

	LC50	LD50	Hodge & Sterner classes	
	mg/(m <sup>3</sup> air)	mg/(kg body wgt)	(inhalation)	(oral)
Pentane	364,000 (rat, inh, 4hr)	446 (mouse, i.v.)	relatively harmless	insufficient data
Calcium carbonate	Not available	64,500 (rat, oral)	insufficient data	relatively harmless
Formaldehyde	400 (mouse, inh, 2hr)	42 (mouse, oral) 100 (rat, oral)	moderately toxic	moderately toxic

#### POTENTIAL HEALTH EFFECTS:

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 polyiso foams (generated dust and residual vapor)*

- 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 dust from polyiso foam causes disease in humans, and no chronic effects are known for exposures to pentane.

##### *For continuous filament glass fibers in 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 limestone and latex in facers (generated dust)*

- Acute: Dust may cause transient mechanical irritation of the upper respiratory tract. Workplace exposure limits are provided in table below.
- Chronic: There is no evidence that dust, containing limestone or latex, causes disease in humans.

#### EYE CONTACT HEALTH HAZARDS:

- Acute: Mechanical irritation, redness, tearing, and blurred vision can occur if dusts generated from these products come into contact with eyes.
- Chronic: None known.

#### SKIN CONTACT HEALTH HAZARDS:

Acute: Direct contact with rough-cut foam or facers 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.

**CARCINOGENICITY:**

Ingredient:	Textile Fibrous Glass
NTP:	Not Listed
IARC:	Not Classifiable – Group 3
OSHA:	Not Listed
Mutagenicity:	None
Teratogenicity:	None
Reproductive Toxicity:	None
California Proposition 65:	Known to the State of California to Cause Cancer. This warning is provided in accordance with the California Safe Drinking Water and Toxic Enforcement Act of 1986.

**SECTION 3: Composition and Ingredient Information**

COMMON NAME	CHEMICAL NAME	WEIGHT % IN ARTICLE‡	CAS NUMBER	
Polyiso foam, containing: Residual blowing agent	isocyanurate homopolymer	50	None	
	normal pentane	< 3	109-66-0	
Non-woven coated glass facer containing:		50	None	
	Fiberglass	continuous filament glass fibers	20	65997-17-3
	Limestone	limestone	Proprietary	1317-65-3
	Latex	polyvinyl acetate	Proprietary	9003-20-7

‡Weight % based on 1-inch foam thickness.

**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	Not applicable
Fiberglass dust	See nuisance dusts	5 TWA	Not applicable
Limestone dust	See nuisance dusts	See nuisance dusts	10 TWA total 5 TWA respirable
n-Pentane vapor	2950 TWA	1410 TWA	350 TWA 1800 Ceiling 3525 IDLH

Formaldehyde	0.9 TWA 2.5 STEL	0.4 TWA	0.02 TWA 0.12 STEL 25 IDLH
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#### SECTION 4: First Aid Measures

##### 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. 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 5: Fire Fighting Measures

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: Not determined.  
 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> )
			UEL	= 7.8%
	Vapor density	= 2.49		

#### SECTION 6: Accidental Release Measures

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).

#### SECTION 7: Handling and Storage

Storage: 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. 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.

### **SECTION 8: Exposure Control – Personal Protection**

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 9: Physical/Chemical Characteristics**

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

Appearance: White or cream-colored foam flat or tapered solid with a coated glass mat facing on each side.

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

### **SECTION 10: Stability and Reactivity**

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 11: Toxicological Information**

Extensive medical-scientific research has been conducted regarding the health aspects of fiber glass over the past 50 years. The International Agency for Research on Cancer (IARC), and agency of the World Health Organization (WHO), at a meeting in June 1987, reviewed all of the significant research on the health effects attributed to fiber glass.

IARC determined that the data from both human and animal studies was inadequate to classify continuous filament glass fibers such as used in fiber glass reinforcement products, as carcinogenic to humans.

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).

## **SECTION 12: Ecological Information**

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 is not manufactured with, nor does it contain any Class 1 Ozone depleting chemicals as defined by EPA in Title VI of the Clean Air Act Amendments of 1990 40 CFR Part 82, Protection of Stratospheric Ozone. This product is not classified as a hazardous air pollutant in the Title III Clean Air Act of 1990.

## **SECTION 13: Disposal Considerations**

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 14: Transportation Information**

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

National Motor Freight Classification (NMFC): 157320, Class 150

## **SECTION 15: Regulatory Information**

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 under Sections 311, 312, or 313 do not apply. [Diisocyanate precursors do not remain in the polymer foam of this product.]

All chemicals and component categories found on state lists are addressed in this SDS.

This product has been classified in accordance with the hazard criteria of Canada's *Controlled Products Regulations* and the SDS contains all of the information required by said regulations. All chemical components are on Canada's Domestic Substances List (DSL). Pentane is the only constituent on Canada's Ingredients Disclosure List (IDL) that exceeds threshold concentrations.

## **SECTION 16: Other Information**

Safety Data Sheet (SDS) prepared by: Atlas Roofing Corporation  
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