



Between the World
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Safety Data Sheet

1: IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME: RAM 200, 201, 203, 30, 306, 306FR, 306FR White, 309, 309FR 309HT, Alum Clad M-B

Manufacturer's Name: Barrett Company, Inc.
33 Stone House Road
Millington, New Jersey 07946-0421

CHEMTREC EMERGENCY PHONE: 800-424-9300
INFORMATION PHONE: 908-647-0100
DATE PREPARED: April 30, 2015

Recommended Use: A component part of commercial waterproofing and roofing systems

Restrictions on Use: Should only be used by a Barrett Approved Professional Contractor strictly following Barrett and NRCA specifications and recommendations.

2: HAZARDS IDENTIFICATION

Bitumen membrane. Asphalt odor. Under normal use, this product is not expected to create any health or environmental hazard. Inhalation of dust or of asphalt fumes can cause a slight respiratory irritation and/or congestion.

NAME	CAS#	%WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
<u>BITUMINOUS BLEND</u>				
Bitumen	8052-42-4	30-70	0.5mg/m ³ Asphalt fumes	Not established
Oxidized bitumen¹	64742-93-4	0-20	0.5 mg/m ³ Asphalt fumes	Not established
Self-adhesive membranes contain: Highly hydrotreated naphthenic oil¹	64742-52-5	0-30	Not established	Not established
Calcium carbonate¹	471-34-1	0-60	10 mg/m ³	Not established
Styrene butadiene co-polymer¹	9003-55-8	0-15	10 mg/m ³	Not established
FR Products: Calcium borate¹	1318-33-8	7-15	10 mg/m ³	Not established
FR Plus products contain: Fire retardant¹	Proprietary	1-5	2 mg/m ³	Not established
<u>REINFORCEMENT</u>				
Some products may contain fiberglass, polyester or a mix of glass grid and polyester.				
Polyester mat¹	N/A	1-7	Not established	Not established
Fiberglass mat¹	N/A	1-7	Not established	Not established
Contains: Fiberglass filament¹	65997-17-3	0,5-7	1f/cc	Not established
<u>UNDERFACE AND SURFACE</u>				
Some membranes are protected by sand, talc, mineral granule, silicone paper, polyethylene or polypropylene film, aluminum, copper or stainless steel foil.				
Silicone paper	N/A	6-20	Not established	Not established
Polypropylene film	N/A	2-10	Not established	Not established
Polyethylene film	9002-88-4	2-10	Not established	Not established
Aluminum, copper or stainless steel foil	N/A	4-15	Not established	Not established
Sand	N/A	7-13	0.1 mg/m ³	Not established
Contains: Crystalline silica ²	14808-60-7	7-13	0.025 mg/m ³	Not established
Talc	14807-96-6	7-13	Not established	Not established
Colored granules	N/A	15-40	Not established	Not established
Contains: Crystalline silica ²	14808-60-7	<12	0.025 mg/m ³	Not established

1. Exposure to the product above that limits of exposure is not likely to occur considering its form (incorporated in the mixture and the provided use. The limit of exposure is given for reference only.

2. A proportion of crystalline silica can be present in the sand sprinkled on the top of some membranes. The crystalline silica contained in the sand is not likely to be found in the ambient air in concentration above the limits of exposure since the sand adheres to the surface of the membrane.

EFFECTS OF SHORT TERM (ACUTE) EXPOSURE:

Skin Contact: The product can cause a mechanical irritation of the skin because of its rough surface. If the membrane is torch-applied, asphalt fumes can cause skin irritation. The asphalt fumes can cause an irritation of the skin. The contact with this product at high temperature can cause thermal burns.

Eye Contact: The product is not likely to cause effects to the eyes. If the membrane is torch-applied, asphalt fumes can be emitted and cause irritations, redness and conjunctivitis to the eyes. The contact with this product at high temperature can cause thermal burns.

Inhalation: The product is not likely to cause effects to the respiratory system. If the membrane is torch-applied, asphalt fumes can be emitted from the product and cause irritations to the nose, the throat and the respiratory tracts, tiredness, headaches, dizziness, nausea and insomnia.

Ingestion: Exposure is not likely to occur by this route of entry under normal use of the product.

LONG TERM (CHRONIC) EXPOSURE:

Skin Contact: The repeated or prolonged contact can cause irritation. If the membrane is torch-applied, asphalt fumes can be emitted. The long-term exposure to the asphalt fumes can cause changes of the pigmentation of the skin which can be worsened by sun exposure. (1)

Inhalation: If the membrane is torch-applied, asphalt fumes can be inhaled. There are no data on chronic effects of the exposure to asphalt fumes on the lungs.

Carcinogenicity: Due to the product form exposure to hazardous dusts or fumes is not expected to occur. Information on carcinogenicity is given for reference only. This product is not classifiable as a carcinogen.

Bitumen – According to the International Agency for Research on Cancer (IARC): is not classifiable as to its carcinogenicity to humans. Epidemiological studies on roofers have generally demonstrated an excess of lung cancer in these workers. However, it is unclear to what extent these cancers may be attributable to asphalt exposures during roofing operations, since in the past; roofers have been exposed to coal tar and asbestos, which are known human lung carcinogens. Trace amounts of poly-nuclear aromatic hydrocarbons (PAHs) may be present in asphalt and can be released upon excessive heating. Some of these PAHs have been identified as having the potential to induce carcinogenic and reproductive health effects. (2)

Oxidized bitumen: In its 2013 monograph (Volume 103), the International Agency for Research on Cancer (IARC) conducted a review of the potential carcinogenicity of bitumen (the European term for asphalt). One of its conclusions was "occupational exposures to oxidized bitumens and their emissions during roofing" are classified in IARC Group 2A, "probably carcinogenic to humans." However, due to the product form, exposure to such component is unlikely under normal conditions of use. (2)

Crystalline Silica – Breathable crystalline silica from sand is not expected to be released because the sand is adhered to the product. According to the IARC, crystalline silica is carcinogenic for human by inhalation. (3)

Fiberglass Filament – Fiberglass is not expected to be released. In 2001, the IARC classified fiberglass as Group 3 "not classifiable as to its carcinogenicity to humans". The American Conference of Governmental Industrial Hygienists (ACGIH) and the National Toxicology Program (NTP) classify the product in Group 2B (possibly carcinogenic to humans) based on studies in which animals were injected with large quantities of fiberglass.

The other ingredients were not found to be carcinogenic or no information is available on that matter.

Teratogenicity, Embryotoxicity, Fetotoxicity: No information available.

Reproductive Toxicity: No information available.

Mutagenicity: No information available.

Toxicologically Synergistic Materials: No information available.

Potential Accumulation: No information available.

3:**COMPOSITION/INFORMATION ON INGREDIENTS**

NAME	CAS#	%WEIGHT
BITUMINOUS BLEND		
Bitumen	8052-42-4	30-70
Oxidized bitumen¹	64742-93-4	0-20
Self-adhesive membranes contain: Highly hydrotreated naphthenic oil	64742-52-5	0-30
Calcium carbonate	471-34-1	0-60
Styrene butadiene co-polymer	9003-55-8	0-15
FR Products: Calcium borate¹	1318-33-8	7-15
FR Plus products contain: Fire retardant¹	Proprietary	1-5
REINFORCEMENT		
Some products may contain fiberglass, polyester or a mix of glass grid and polyester.		
Polyester mat¹	N/A	1-7
Fiberglass mat¹	N/A	1-7
Contains: Fiberglass filament	65997-17-3	0,5-7
UNDERFACE AND SURFACE		
Some membranes are protected by sand, talc, mineral granule, silicone paper, polyethylene or polypropylene film, aluminum, copper or stainless steel foil.		
Silicone paper	N/A	6-20
Polypropylene film	N/A	2-10
Polyethylene film	9002-88-4	2-10
Aluminum, copper or stainless steel foil	N/A	4-15
Sand	N/A	7-13
Contains: Crystalline silica	14808-60-7	7-13
Talc	14807-96-6	7-13
Colored granules	N/A	15-40
Contains: Crystalline silica	14808-60-7	<12

1. Exposure to the product above that limits of exposure is not likely to occur considering its form (incorporated in the mixture and the provided use. The limit of exposure is given for reference only.
2. A proportion of crystalline silica can be present in the sand sprinkled on the top of some membranes. The crystalline silica contained in the sand is not likely to be found in the ambient air in concentration above the limits of exposure since the sand adheres to the surface of the membrane.

4:**FIRST AID MEASURES**

Skin Contact – If there is presence of dust on the skin, wash gently with water and soap. In the event of contact with the product melted, do not try to remove the product off the affected area and rinse the area affected in cold water. Obtain immediate medical attention. At the end of each working day, clean all the parts of the body which came into contact with asphalt fumes. Clean the clothing contaminated by the asphalt fumes.

Eye Contact – Flush eyes with water for at least 15 minutes while holding eyelids open. Do not attempt to remove material from affected area without medical assistance. Obtain immediate medical attention.

Inhalation – Remove victim from contaminated place and restore breathing, if required.

Ingestion – The ingestion of this product is not very likely to occur.

5:**FIRE FIGHTING MEASURES**

Flammability – Not Applicable

Flash Point – Not Applicable

Flammability Limits in Air – (% in volume) Not Applicable

Explosion Data – Not Applicable

Auto-Ignition Temperature – Not Applicable

Fire and Explosion Hazards – Asphalt fumes are flammable. Torch, used to weld waterproofing membranes, can produce temperatures beyond 2000°F (1100°C). Avoid all contact with materials sensitive to these temperatures, as lead or plastic materials. Never work in an enclosed area where gas can accumulate. Shield air conditioning units and other protrusions on the roof with perlite panels or similar material. Never use torches:

- When substrate(s) have been recently covered by solvent-based products (wait until dry).
- Near any combustible materials.
- Close to containers containing flammable liquids or materials (keep open flame at least 3m [10'] away).
- Directly on combustible substrate or insulation.

Voids, holes or gaps in substrate or located nearby the welding zone must be protected against flame penetration. Particular precautions must be taken to keep combustible or heat sensitive insulation or other materials away from the torch flame. If wood fiber panels must be installed, use fireproof panels. Avoid presence of combustible materials near open flame. At all times and especially when leaving the job site, make sure that there is no smoldering or concealed fire. In that case, strictly follow the safety measures. Job planning must allow employee presence on the roof at least one hour after torch application. At the end of every day, use a heat detector gun to discover any unusually hot surface. Always have one ABC fire extinguisher on hand, filled and in perfect working order near each torch.

Combustion Products – burning of this material will produce thick black smoke. Irritating and/or toxic gases (including Hydrogen Sulphide and Sulphur Dioxide, Carbon Dioxide and Carbon Monoxide) and traces of metallic fumes may be generated by thermal decomposition or combustion.

Fire Fighting Instructions – Evacuate the area. Wear self-contained breathing apparatus and appropriate protective clothing that are in accordance with standards. Approach fire from upwind and fight it from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from the containers at the time of the fire considering the high risk of explosion. Move the rolls of membrane from fire area if it can be done without risk. Cool the rolls of membrane with flooding quantities of water until well after fire is out.

Extinguishing Media – Foam, CO₂, sand, chemical powder.

6: ACCIDENTAL RELEASE MEASURES

Release or Spill – If hot material is spilled, allow enough time to cool completely and remove to a container for disposal. Wear appropriate breathing apparatus (if applicable) and protective clothing. Notify appropriate environmental agencies. Wash spill area with soap and water. Dispose of the material according to local environmental regulations.

7: HANDLING AND STORAGE

Handling – Products must be applied by qualified applicators who have received an adequate training on prevention and protection (in particular for the use of the extinguishers) against accidents caused by use of combustible or flammable materials, of liquefied propane gas, open flame, and their material of installation. The present recommendations must be imperatively related to knowledge of the employees before the application of the products to the building site. Check the construction and the composition of the systems of roof and walls before welding. Ensure of the cleanliness of the places (debris).

Precautions of the use of the torch: Use only proper torching equipment in perfect working order (C.S.A certified). Never modify torching equipment. Use only proper hoses suited for propane gas of less than 15m (50'). Verify and tighten all the connections before the use of the equipment. Do not light the torch if a propane odor is present. Never seek a leak with a flame. Use a torch whose gas output is adjustable with stopping device. Follow the specifications, notices and documentations of the manufacturers.

Storage: Flashings must be stored in such a way to prevent any creasing, twisting, scratches and other damages of the roof. The materials must be protected adequately and stored permanently away from flames or welding sparks, protected from bad weather and any harmful substances. Store self-adhesive membranes away from the sun.

8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Bitumen membrane. Asphalt odor. Under normal use, this product is not expected to create any health or environmental hazard. Inhalation of dust or of asphalt fumes can cause a slight respiratory irritation and/or congestion.

NAME	CAS#	EXPOSURE LIMIT (ACGIH)	
		TLV-TWA	TLV-STEL
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Styrene butadiene co-polymer¹	9003-55-8	10 mg/m ³	Not established
FR Products: Calcium borate¹	1318-33-8	10 mg/m ³	Not established
FR Plus products contain: Fire retardant¹	Proprietary	2 mg/m ³	Not established
REINFORCEMENT			
Some products may contain fiberglass, polyester or a mix of glass grid and polyester.			
Polyester mat¹	N/A	Not established	Not established
Fiberglass mat¹	N/A	Not established	Not established
Contains: Fiberglass filament¹	65997-17-3	1f/cc	Not established
UNDERFACE AND SURFACE			
Some membranes are protected by sand, talc, mineral granule, silicone paper, polyethylene or polypropylene film, aluminum, copper or stainless steel foil.			
Silicone paper	N/A	Not established	Not established
Polypropylene film	N/A	Not established	Not established
Polyethylene film	9002-88-4	Not established	Not established
Aluminum, copper or stainless steel foil	N/A	Not established	Not established
Sand	N/A	0.1 mg/m ³	Not established
Contains: Crystalline silica ²	14808-60-7	0.025 mg/m ³	Not established
Talc	14807-96-6	Not established	Not established
Colored granules	N/A	Not established	Not established
Contains: Crystalline silica ²	14808-60-7	0.025 mg/ m ³	Not established

1. Exposure to the product above that limits of exposure is not likely to occur considering its form (incorporated in the mixture and the provided use. The limit of exposure is given for reference only.
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Hands: Wear resistant gloves.

Respiratory: If the threshold limit value (TLV) for dust is exceeded and if use is performed in a poorly ventilated confined area, use an approved respirator that is in accordance with standards.

Eyes: Wear safety goggles that are in accordance with standards.

Body: Wear adequate protective clothes. Do not wear synthetic fabric. Remove clothing contaminated with solvents.

Other: Eye bath and safety shower.

9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor Threshold: Not available

Vapor Density (air=1): Not applicable

Boiling Point (760 mm Hg): Not applicable

Specific Gravity (H₂O=1): Variable

Volatile Organic Compound Content (V.O.C.): Not measurable

Odor and Appearance: Black membrane with asphalt odor.

Vapor pressure (20°C): Not applicable

Evaporation Rate (Butyl acetate = 1): Not applicable

Freezing Point: Not applicable

Solubility in Water (20°C): None

Viscosity: Not applicable

10: STABILITY AND REACTIVITY

Stability: This Material is Stable

Conditions of Reactivity: Avoid excessive heat.

Incompatibility: Acid and strong basis, organic solvents, and greasy substances.

Hazardous Decomposition Products: None identified.

Hazardous Polymerization: None

11:

TOXICOLOGICAL INFORMATION

Toxological Data:**Natural graphite:** (3)

LC50 (rat): > 64,400 mg/kg
LD50 (oral, rat): > 10,000 mg/kg

Decabromodiphenyl Oxide: (1)

LC50 (rat) : > 50 mg/kg
LD50 (oral, rat): > 5,000 mg/kg
LD50 (dermal, rat): > 2,000 mg/kg

No information is available on other products.

Effects of Short-Term (Acute) Exposure: No information available.

Effects of Long-Term (Chronic) Exposure:**Carcinogenicity:**

Asphalt – data from experimental studies on animals and cultured mammalian cells indicate that laboratory- generated roofing asphalt fume condensates are genotoxic and cause skin tumors. (2)

Crystalline Silica – Several studies have shown an increased incidence of lung tumors on rats exposed to quartz by inhalation for up to 2 years. The IARC has determined that there is sufficient evidence that quartz is carcinogenic to experimental animals. (3)

The other ingredients were not found to be carcinogenic or no information is available on that matter

Reproductive Effects: No information available.

Teratogenicity, Embryotoxicity, Fetotoxicity: No information available.

Mutagenicity:

Crystalline Silica – None according to the information available.

No information available about the other ingredients.

Synergistic Materials: Tobacco smoke increases the effects of silica dust on respiratory system. Simultaneous exposure to known carcinogens as benzo (a), pyrene can increase the carcinogenicity of crystalline silica.

12:

ECOLOGICAL INFORMATION

Environmental Effects: No data available.

Biodegradability: This product is not biodegradable. There is no possible bioaccumulation and unlikely bioconcentration in the food chain.

13:

DISPOSAL CONSIDERATION

Waste Disposal: This product is not hazardous waste. Consult local, provincial, territory or state authorities to know disposal methods. This material is not listed by the EPA as hazardous waste according to the Resource Conservation and Recovery Act (RCRA) of the United States. No Environmental Protection Agency (EPA) waste numbers are applicable for this product.

14:

TRANSPORT INFORMATION

This product is not regulated by the Department of Transportation (DOT) and Transportation Dangerous Goods (TDG).

15:

REGULATORY INFORMATION

DSL: All constituents of this product are included in the Domestic Substances List (DLS) of Canada.

TSCA: All constituents of this product are listed on the Toxic Substances Control Act Inventory (TSCA - United States).

Prop. 65: This product contains chemicals known to the State of California to cause cancer or reproductive toxicity.

Date Prepared: April 30, 2015

Supersedes: August 27, 2014 version

In this update: Oxidized bitumen added to Sections 2, 3 and 8.
GHS format

Glossary -

ACGIH: American Conference of Governmental Industrial Hygienists (United States)

ANSI: American National Standards Institute (United States)

ASTM: American Society for Testing and Materials (United States)

CAS: Chemical Abstract Services

CFR: Code of Federal Regulations (United States)

CSA: Canadian Standardization Association

DOT: Department of Transportation (United States)

DSL: Domestic Substances List (Canada)

EPA: Environmental Protection Agency (United States)

GHS Globally Harmonized System

IARC: International Agency for Research on Cancer

LD50/LC50: Less high lethal dose and lethal concentration published

NFPA: National Fire Protection Association (United States)

NIOSH: National Institute for Occupational Safety and Health (United States)

NTP: National Toxicology Program (United States)

OSHA: Occupational Safety & Health Administration (United States)

RCRA: Resource Conservation and Recovery Act (United States)

TDG: Transportation of Dangerous Goods (Canada)

TLV-TWA: Threshold Limit Value – Time-Weighted Average

TSCA: Toxic Substances Control Act (United States)

References:

- (1) Safety Data Sheet from the supplier
- (2) WHO (2013) Bitumens and bitumen emissions, and some N- and S- heterocyclic polycyclic aromatic hydrocarbons. Volume 103. IARC monographs on the evaluation of carcinogenic risks to humans.
- (3) CHEMINFO (2015) Canadian Centre of Occupational Health and Safety, Hamilton (Ontario) Canada

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