

**SAFETY DATA SHEET**  
**LOW PRESSURE POLYURETHANE FOAM**  
**AH-160 A-SIDE COMPONENT CYLINDER (134a)**



**SECTION 1- IDENTIFICATION**

**1.1 Product Identifier**

**Product Name:** Polyset Roof Tile Adhesive AH-160 A-side, Cylinder

**ID SDS:** 3067022

**Product Identification:** 62481281509, 62481283000, 62484882500

**1.2 Relevant identified uses of the substance or mixture and uses advised against:**

**General Use** Low pressure polyurethane roof tile adhesive, Side-A Component, for PROFESSIONAL USE ONLY

**Uses advised against** No further information available

**1.3 Details of the supplier and of the safety data sheet:**

**Manufacturer** ICP Adhesives and Sealants

2775 Barber Road

Norton, Ohio 44203

In Ohio: 330-753-4585; 1-800-321-5585 (Monday-Friday, 8:00 am – 5:00pm EST)

**1.4 Emergency telephone numbers:**

**In the U.S.A** CHEMTEL (24 hours) 1-800-255-3924

**International** CHEMTEL (24 hours) 1-813-248-0585

**SECTION 2- HAZARDS IDENTIFICATION**

**2.1 Classification of substance or mixture**

**Product Definition:** Mixture

**Classification:** Gases Under Pressure-Compressed Gas

Skin Irritation- Category 2

Skin Sensitization- Category 1

Eye Irritation- Category 2A

Acute Toxicity Inhalation- Category 4

Respiratory Sensitizer- Category 1

Specific Target Organ Toxicity, Single Exposure -Category 2

Specific Target Organ Toxicity (respiratory irritation)- Category 3

Specific Target Organ Toxicity, Repeated Exposure- Category 1

**2.2 Label elements**

**Hazard Symbols:**



**Signal Word:**

**DANGER**

**Hazard Statements:**

H280 Contains gas under pressure; may explode if heated

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H319 Causes serious eye irritation

H332 Harmful if inhaled

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 May cause respiratory irritation

H373 May cause damage to organs through prolonged or repeated exposure: respiratory system

**Prevention:**

P260 Do not breathe dust/fume/gas/mist/vapors/spray

P264 Wash hands and other skin areas exposed to material thoroughly after handling

P270 Do not eat, drink, or smoke when using this product

P271 Use outdoors or in a well-ventilated area

P272 Contaminated work clothing should not be allowed out of the workplace

P280 Wear protective gloves, protective clothing and eye protection

P285 In case of inadequate ventilation wear respiratory protection

**Response:**

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical attention

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

- easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice.
- P337+P313 If eye irritation persists: Get medical attention
- P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
- P362 Take off contaminated clothing and wash before reuse.

**Storage:**

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.

**Disposal:**

- P501 Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3 Hazards not otherwise classified**

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

2% of the mixture consists of ingredients of unknown acute oral toxicity

2% of the mixture consists of ingredients of unknown acute inhalation toxicity

**SECTION 3-COMPOSITION/ INFORMATION ON INGREDIENTS****3.1 Substances**

Not applicable

**3.2 Mixtures**

Chemical characterization (preparation):

% by Weight	Ingredient	CAS No.
60-100	Polymeric diphenylmethane diisocyanate	9016-87-9
30-45	4,4' Diphenylmethane diisocyanate	101-68-8
5-10	1,1,1,2- Tetrafluoroethane	811-97-2
1-5	Non-hazardous components	Not Available
0.5-5	Diphenylmethane-2,4'- Diisocyanate	5873-54-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to the health or the environment and hence require reporting in this section.

**SECTION 4- FIRST AID MEASURES****4.1 Description of first aid measures**

Inhalation: Remove person to fresh air. Get medical attention.

Eye: Immediately flush eyes with large amounts of water for at least 15 minutes, holding the eyes open with fingers and occasionally lifting the upper and lower lids. Use lukewarm water if possible. If present and easy to do, remove contact lenses. If irritation persists, get medical attention.

Skin: Flush skin with large amounts of water while removing contaminated clothing. Gently wipe product from skin with a damp cloth and continue rinsing for 15 minutes. Wash clothing before reuse. Call a physician if irritation persists.

Ingestion: If swallowed, rinse mouth. If you feel unwell, get medical attention.

**4.2 Most important symptoms and effects, both acute and delayed**

See section 11.1. Information on toxicological effects

**4.3 Notes to the physician**

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

**SECTION 5- FIRE FIGHTING MEASURES****5.1 Extinguishable media**

DO NOT USE WATER. In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

**5.2 Special hazards arising from the substance or mixture**

Cylinders may explode due to the buildup of pressure when exposed to extreme heat. Overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Hazardous decomposition products: Carbon monoxide, Carbon dioxide, Hydrogen cyanide, Oxides of Nitrogen.

**5.3 Advice for firefighters**

Keep upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Use water spray to keep fire-exposed containers cool.

## SECTION 6- ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice.

### 6.2 Environmental precautions

Avoid dispersal of spilled material or run-off and prevent contact with soil and entry into drains, sewers or waterways.

### 6.3 Methods and materials for containment and cleaning up

Cover drains and contain spill. Cover spilled material with a large quantity of inert absorbent. Collect material and place into an approved, open-head metal container. Decontaminate the spill and waste area with a neutralization solution. Wait 15 minutes. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Allow container to vent for 72 hours to let carbon dioxide escape. Dispose of waste via a licensed waste disposal contractor in accordance with all applicable federal, state, provincial and local regulations. Ensure adequate ventilation.

Additional spill procedures- neutralization solutions (decontamination):

Use ten parts of solution for each part of the spill.

- (1) An aqueous solution containing 3-8% ammonium hydroxide or concentrated ammonia and 0.2-0.5% liquid detergent
- (2) An aqueous solution containing 5-10% sodium bicarbonate and 0.2-0.5% liquid detergent

### 6.4 Reference to other sections

For indications about waste treatment, see Section 13.

See Section 7 for information on Safe Handling.

## SECTION 7- HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Keep away from reactive metals (i.e. aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, well-ventilated area and away from incompatible materials (see Section 10.5). Do not store at temperatures above 95°F (35°C) or below 45°F (7.2°C). Do not expose the cylinders to open flame or temperatures above 122°F (50°C); storage at elevated temperatures can cause the container to rupture. Excessive heat can cause premature aging of components resulting in a shorter shelf life. Protect containers from physical abuse. Always store the containers in the upright position.

## SECTION 8- EXPOSURE CONTROLS/ PERSONAL PROTECTION

### 8.1 Control Parameters

Ingredient	CAS Number	OSHA-PEL	ACGIH-TLV	Other/Canada
4,4' Diphenylmethane diisocyanate	101-68-8	0.2 mg/m <sup>3</sup> ; 0.02 ppm CEIL	0.051 mg/m <sup>3</sup> ; 0.005 ppm (8 hours TWA)	<b>NIOSH</b> - 0.2 mg/m <sup>3</sup> ; 0.02 ppm CEIL 0.051 mg/m <sup>3</sup> ; 0.005 ppm TWA <b>EL (Canada)</b> Long Term Value 0.005 ppm; Ceiling limit value 0.01 ppm; Skin: S <b>EV (Canada)</b> Long Term Value 0.005 ppm; Ceiling limit value 0.02 ppm
1,1,1,2 Tetrafluoroethane	811-97-2			WEEL 1,000 ppm AIHA TWA 4240 mg/ m <sup>3</sup>

### 8.2 Exposure controls:

**Engineering Controls:** Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

**Eye/face Protection:** Recommend the use of full face shield and indirect vented goggles.

**Hand Protection:** Use chemically resistant gloves (i.e. Nitrile gloves). Nitrile/butadiene rubber, butyl rubber, polyethylene, PVC (vinyl), or neoprene gloves are also effective. Glove selection should take into account potential body reactions to certain materials and manufacturer's instructions for use. Break through time of selected gloves must be greater than the intended use period.

**Other Protective Equipment:** Use clothing that protects against dermal exposure. Appropriate protective clothing varies depending on the potential for exposure. To ensure proper skin protection, wear PPE in such a manner that no skin is exposed.

**Respiratory Protection:** An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type (s) to reduce inhalation exposure: Half face piece or full face piece supplied-air respirator. For questions about suitability for a specific application, consult with your respirator manufacturer.

**Hygiene Measures:** An eye wash station or portable eye wash station should be in the area. Wash hands thoroughly after use, before eating, drinking or using the lavatory. Employees/Users should be educated and trained in the safe use and handling of this product.

**Medical Surveillance:** All employees/end-users who work with isocyanates should undergo a medical evaluation. A history of eczema or respiratory allergies are possible reasons for medical exclusion from working with isocyanates. Users with a prior history of isocyanate sensitization should be excluded from further work with isocyanates. Once a user is diagnosed with being sensitized to isocyanates, no further exposure should be permitted.

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## SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

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9.1 Information on basic physical and chemical properties	
General Physical Form	Amber to dark brown liquid. Forms an off-white to yellowish froth when released from the container
Odor	Slightly musty
Odor Threshold	No data available
pH	No data available
Melting Point/Freezing Point	No data available
Initial Boiling Point and Boiling Range	< 0°F
Flash Point	425°F
Evaporation Rate	No data available
Flammability	No applicable
Lower Flammability/Explosive Limit	Not available
Upper Flammability/Explosive Limit	Not available
Vapor Pressure	<= 166 psi @25°C
Vapor Density	>= 3.03 g/cm <sup>3</sup> @ 25°C (AIR= 1)
Density	~ 1.23 g/ml (when used as intended with Part B)
Solubility in water	Insoluble; reacts slowly with water during cure, liberating traces of CO <sub>2</sub>
Partition coefficient: n-octanol/water	No data available
Decomposition Temperature	No data available
Viscosity	130 centipoise @ 25°C
Oxidizing Properties	Not available
VOC Content (calculated minus exempt compounds)	0 g/L (Minus exempt compounds)

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## SECTION 10- STABILITY AND REACTIVITY

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### 10.1 Reactivity

This material may be reactive with certain agents under certain conditions- see the remaining headings in this section.

### 10.2 Chemical stability

Stable under normal conditions of use and recommended storage conditions. See Section 7 for storage recommendations.

### 10.3 Possibility of hazardous reactions

Exposure to elevated temperatures can cause containers to rupture or explode. Avoid moisture, material reacts slowly with water releasing carbon dioxide. Chemicals are under pressure.

### 10.4 Conditions to avoid

Avoid heat, light and flames.

### 10.5 Incompatible materials

Water, amines, strong bases, aluminum, alcohols

### 10.6 Hazardous decomposition products

None known.

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## SECTION 11- TOXICOLOGICAL INFORMATION

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**Signs and Symptoms of Exposure based on test data and/or information on the components, this material may produce the following health effects:**

### 11.1 Information on toxicological effects

**Signs and Symptoms of Exposure based on test data and/or information on the components, this material may produce the following health effects:**

**Inhalation:** Isocyanates vapors at concentrations above the concentration limits or guidelines can irritate the mucous membranes in the respiratory tract with symptoms of burning sensation, runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (difficulty breathing). Persons with a pre-existing, nonspecific bronchial hyperactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible; however, increased lung sensitivity may persist for a longer period of time. May be harmful if inhaled. Inhalation of the propellant may cause lightheadedness, headache and lethargy.

**Eye Contact:** May cause eye irritation. Symptoms may include redness, swelling, stinging, and tearing. May cause temporary corneal injury. Product vapor may cause eye irritation with symptoms of burning and tearing.

**Skin Contact:** May cause skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause an allergic reaction. Can cause sensitization. Persons previously sensitized can experience allergic skin reactions. May be harmful if absorbed through the skin.

**Ingestion:** May be harmful if swallowed. May cause gastrointestinal irritation: stomach distress, nausea, or vomiting.

#### Acute oral toxicity

Expected to have low acute oral toxicity. 4,4'- Diphenylmethane diisocyanate: LD50, rat: >5000 mg/kg

#### Acute inhalation toxicity

At room temperature, vapors are minimal. See above for possible exposures. 4,4'- Diphenylmethane diisocyanate: LC50, rat: 490 mg/m<sup>3</sup>, 4h

#### Acute dermal toxicity

Expected to have a low acute dermal toxicity. 4,4'- Diphenylmethane diisocyanate: LD50, rabbit: >5000 mg/kg

#### Skin irritation

Causes skin irritation

#### Eye irritation

Causes moderate to serious eye irritation

#### Sensitization

May cause skin and respiratory sensitization

#### Genotoxicity

Genetic toxicity data for MDI is inconclusive. Some in-vitro studies yield positive results, while other test data were negative

#### Mutagenicity

Test data using laboratory animals was predominately negative

#### Specific organ toxicity- single exposure

May cause respiratory irritation

#### Specific organ toxicity- repeated exposure

May cause damage to the lungs, central nervous system and skin

#### Aspiration hazard

No data available

### 11.2 Further information

MDI and PMDI: IARC Group 3 carcinogen- Not classifiable as to its carcinogenicity to humans. Not listed as a carcinogen by ACGIH, OSHA or NTP. MDI/PMDI did not cause birth defects in laboratory animals; fetal effects occurred only at high doses which were toxic to the mother. Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/PMDI (6mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

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## SECTION 12- ECOLOGICAL INFORMATION

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### 12.1 Ecotoxicity

Ecotoxicological data reported are for a comparable product. The Ecotoxicity is that of the hydrolyzed product generally under conditions of maximizing production of soluble species. This material is not classified as dangerous to aquatic organisms (LD50/EC50 greater than 100 mg/l in the most sensitive species).

**Acute and prolonged toxicity to fish:** LC50- Brachydanio rerio (Zebra fish), 96h >1000 mg/l

**Toxicity to aquatic invertebrates:** EC50- Daphnia magna (Water flea) 48h >1000 mg/l  
**Toxicity to aquatic plants:** NOEC- Desmodesmus subspicatus (Green algae) static, 72 h >1640 mg/l, growth rate inhibition  
**Toxicity to aquatic microbes:** OECD 209 Test- Activated Sludge 3 h >100 mg/l, respiration inhibition  
**Toxicity to soil dwelling organisms:** EC50- Eisenia fetida (earthworms) 14 d >1000 mg/kg

**12.2 Persistence and degradability**

Product is not readily biodegradable. In aquatic and terrestrial environments, this material reacts with water, forming predominantly insoluble and stable polyureas. In the atmospheric environment, this material is expected to have a short tropospheric half-life, based on data from similar diisocyanates.

**12.3 Bioaccumulation potential**

Bioaccumulation potential is low.

**12.4 Mobility**

Expected to have low mobility based on product's reactivity with water, which forms predominately insoluble polyureas.

**12.5 Results of PBT and vPvB assessment**

No data available

**12.6 Other adverse effects**

**Additional ecological information:** Do not allow material to run into surface waters, wastewater, or soil. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

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**SECTION 13- DISPOSAL CONSIDERATIONS**


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**13.1 Waste Treatment Methods**

**Procedure for handling empty refill cylinders:**

**THESE CYLINDERS ARE RETURNABLE.** These cylinders are shipped back to ICP Adhesives & Sealants to be cleaned, refilled and redistributed. For return instructions please call Customer Care at 330.753.4585.

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**SECTION 14- TRANSPORTATION**


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Note: Transportation information is for reference only. Customer is urged to consult 49 CFR 100-177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

	<b>Containers Greater Than 1000 cu. cm. (1 liter)</b>
<b>Ground</b>	UN3500 Chemical Under Pressure n.o.s. (1,1,1,2 Tetrafluoroethane) 2.2 (Non-Flammable Gas Label)
<b>Air</b>	UN3500 Chemical Under Pressure n.o.s. (1,1,1,2 Tetrafluoroethane) 2.2 (Non-Flammable Gas Label) Packing Instruction (Cargo & Passenger) 218
<b>Water</b>	UN3500 Chemical Under Pressure n.o.s. (1,1,1,2 Tetrafluoroethane, Nitrogen) 2.2 (Non-Flammable Gas Label)

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**SECTION 15- REGULATORY**


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**15.1 Safety, health, and environmental regulations/legislations specific for the substance or mixture****U.S. Federal Regulations:**

**OSHA Hazard Communication Standard:** This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200

**TSCA Status:** All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory. This product is not subject to TSCA 12(b) Export Notification.

**Superfund Amendments and Reauthorization Act (SARA)****SARA Section 311/312 Hazard Categories:**

Fire Hazard- No Pressure Hazard-Yes Reactivity Hazard- Yes Immediate Hazard- Yes Delayed Hazard- Yes

**SARA 313 Information:** MDI and PMDI are subject to reporting levels established by Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.

**SARA 302/304 Extremely Hazardous Substance:** No components of the product exceed the threshold (de minimis) reporting levels established by these sections of the Title III of SARA.

**SARA 302/304 Emergency Planning & Notification:** No components of the product exceed the threshold (de minimis) report levels

established by these sections of the Title III of SARA.

**Comprehensive Response Compensation and Liability Act (CERCLA):** This product contains the following CERCLA reportable substances: 4,4'- Diphenylmethane diisocyanate (CAS #101-68-8), RQ- 2,268 kg (5,000 lbs).

**Clean Air Act (CAA) - 4,4'- Diphenylmethane diisocyanate (CAS #101-68-8)** is listed as a Hazardous Air Pollutant (HAP) designated in CAA Section 112 (b). This product does not contain any Class 1 or Class 2 Ozone depletors.

**Clean Water Act (CWA) - 4,4'- Diphenylmethane diisocyanate (CAS #101-68-8)** is listed as a Hazardous Substance under the CWA. None of the chemicals in these products are listed as Priority Pollutants under the CWA. None of the chemicals listed in these products are listed as Toxic Pollutants under the CWA.

#### **U.S. State Regulations:**

**California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:** None of the components are listed.

#### **Other U.S. State Inventories:**

4, 4'- Diphenylmethane diisocyanate (CAS #101-68-8) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/air Pollutants lists: CA, DE, ID, IL, ME, MA, MN, NJ, PA, WA, WI

Polymeric MDI (CAS #9016-87-9) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: DE, NJ, MN

1,1,1,2- Tetrafluoroethane (CAS #811-97-2) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: ME, WI

**15.2 Chemical safety assessment:** For this product a chemical safety assessment was not carried out

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## **SECTION 16- OTHER**

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#### **NFPA: Health Hazard 2; Flammability 1; Reactivity 1**

Hazard Rating: 0=minimal, 1= slight, 2=moderate, 3=severe, 4= extreme

The information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof. The manufacturer makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving it will make their own determination as to its suitability for their purposes prior to use. In no event will the manufacturer be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. No representations or warranties, either expressed or implied, of merchantability or fitness for a particular use are made hereunder with respect to this information or the product to which information refers.

Information contained herein is deemed to be reliable, conservative and accurate. ICP Adhesives & Sealants Inc. reserves the right to change the design, specifications or any other features at any time and without notice, while otherwise maintaining regulatory compliance.

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**Replaces- July 19, 2016 Version 2.1**