SAFETY DATA SHEET
LOW PRESSURE POLYURETHANE FOAM ADHESIVES (1234ze)

SECTION 1- PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifier

Product Name:	**APOC RTA-1 (HFO) Cylinder**
Product Item Number:	AP-705-23C
SDS ID Number	SD054

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

General Use	One Component Polyurethane Foam Adhesive
Uses advised against	

1.3 Details of the supplier and of the safety data sheet

Responsible Party:	APOC PO Box 5449 Tampa, FL 33675 In Florida: 1-813-248-2101 (Monday-Friday, 8:00am – 5:00pm EST)
Manufacturer:	ICP Building Solutions Group 2775 Barber Road Norton, Ohio 44203 In Ohio: 330-753-4585; 1-800-321-5585 (Monday-Friday, 8:00am – 5:00pm EST)

1.4 Emergency telephone numbers

In the U.S.A	CHEMTREC (24 hours) 1-800-424-9300
International Emergency	CHEMTREC (24 hours) 1-703-527-3887

SECTION 2- HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Mixture

Classification:

Gases Under Pressure- Compressed Gas
Acute Toxicity Inhalation- Category 4
Skin Irritation- Category 2
Serious Eye Irritation- Category 2A
Respiratory Sensitizing- Category 1
Skin Sensitization – Category 1
Specific Target Organ Toxicity SE 3
Specific Target Organ Toxicity RE 2

2.2 Label elements

Hazard Symbols:

Signal Word: **WARNING**

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

Prevention:

P102- Keep Out of Reach of Children
P202- Do not handle until all safety precautions have been read and understood
P251- Pressurized Container: Do not pierce or burn, even after use
P260- Do not breathe dust/fume/gas/mist/vapors/spray

P262- Do not get in eyes, on skin, or on clothing
P264- Wash hands and other skin areas exposed to material thoroughly after handling
P271- Use only outdoors or in a well-ventilated area
P273- Avoid release to the environment
P280- Wear protective gloves, protective clothing and eye protection
P285- In case of inadequate ventilation wear respiratory protection

Response: P302+P352+P333+P313 IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position 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.
P314- Get medical advice if you feel unwell
P342+P311- If experiencing respiratory symptoms: Call a POISON CENTER or doctor
P381- Eliminate all ignition sources if safe to do so

Storage: P403+P405- Store in a well-ventilated place. Store locked up.
P410- Protect from sunlight
P412- Do not expose to temperatures exceeding 50°C/122°F.

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

SECTION 3- COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	Ingredient	CAS No.
60-100	Urethane Pre-Polymer Blend (Non-Hazardous Polyol Blend)	Not Available
10-30	Trans-1,3,3,3-tetrafluoroprop-1-ene	29118-24-9
5-10	4,4' Diphenylmethane diisocyanate (MDI)	101-68-8
5-10	Polymethylene polyphenyl isocyanate (PMDI)	9016-87-9
5-10	Tris (1-chloro-2-propyl) phosphate	13674-84-5

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

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 so, remove contact lenses, If irritation persists, get medical attention.

Skin: In case of contact, immediately flush skin with plenty of soap and water. Foam will stick to skin, gently wipe product from skin with a damp cloth and wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/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

Symptoms may not appear immediately. If case of an accident or if you feel unwell, seek medical advice immediately (show label or SDS if possible).

SECTION 5- FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable methods of extinction: Use dry chemical, carbon dioxide, foam, Halon 1211 and water spray or fog.
Unsuitable methods of extinction: Do not use water jets and high-pressure water as these may spread the fire

5.2 Special hazards arising from the substance or mixture

Contains compressed gas/chemicals under pressure. Eliminate all ignition sources. Closed cylinders may explode due to buildup of pressure when exposed to extreme heat. Aerosol cans exposed to fire or high temperature can rupture and rocket. Cured foam will burn in the presence of heat, oxygen and an ignition source. Highly toxic gases may be generated by thermal decomposition or combustion. Overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Hazardous decomposition products may include and are not limited to: Carbon monoxide, Carbon dioxide, Aldehydes, Oxides of Nitrogen.

5.3 Advice to 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. Containers may explode if heated.

SECTION 6- ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

6.2 Environmental precautions

Do not allow to enter sewers, drains, or waterways

6.3 Methods and materials for containment and cleaning up

Method for containment: Uncured product is very sticky; carefully remove the bulk of the foam by scraping it up and then immediately remove the residue with a rag and solvent such as Handi-Cleaner, mineral spirits, acetone (nail polish remover), paint thinner, etc. Once the product is cured it can only be removed mechanically by scraping, buffing, etc. Use appropriate PPE.

Methods for cleaning up: Scoop up material and place in a disposal container. Dispose of as plastic waste in accordance with all applicable guidelines and regulations. Vapors can accumulate in low areas. Provide ventilation.

6.4 Reference to other sections

For indications about waste treatment & disposal, see Section 13.
For handling & storage, see Section 7.

SECTION 7- HANDLING AND STORAGE

7.1 Precautions for safe handling

Pressurized container: do not pierce or burn, even after use. Container may explode if heated. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Do not swallow. Use only in a well-ventilated area or outdoors. Avoid welding or other “hot work” in the vicinity of exposed cured foam. When using do not eat, drink, or smoke. (See section 8)
General hygiene advice: Launder contaminated clothing before reuse. Wash hands before eating, drinking or smoking.

7.2 Conditions for safe storage including any incompatibilities

Store in a dry place. Ideal use temperature is 65°F to 80°F (18°C to 27°C). Do not expose aerosol cans or cylinders to open flame or store at temperatures above 122°F (50°C). Excessive heat can cause premature aging of components resulting in a shorter shelf life. Storage below 55°F (12.7°C) may affect foam quality if chemicals are not warmed to room temperature before using. Protect containers from physical abuse. Keep cylinders upright. **KEEP AWAY FROM CHILDREN.**

SECTION 8- EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control Parameters

CAS No.	Ingredient	OSHA-PEL TWA	ACGIH-TLV	NIOSH/ Other
101-68-8	4,4’ Diphenylmethane diisocyanate	0.02 PPM; 0.2 mg/m^3 Ceiling	0.005 ppm; 0.051 mg/ m^3 (8 hours) TWA	0.005 ppm; 0.050 mg/m^3 TWA 0.02 ppm; 0.2 mg/m^3 CEIL
29118-24-9	Trans-1,3,3,3-tetrafluoroprop-1-ene			WEEL 800 ppm

8.2 Exposure Controls:

Engineering measures: Use ventilation adequate to keep exposures below recommended exposure limits.
Eye/face Protection: Wear protective safety glasses with side shields or 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: If atmospheric levels are expected to exceed the exposure levels, use a NIOSH approved air purifying respirator equipped with an organic vapor cartridge and particulate filter. If atmospheric levels exceed 10 times the TLV or PEL level for which an air-purifying respirator is effective, use a powered air purifying respirator (PAPR). The type of respiratory protection selected must comply with the requirements set forth in OSHA’s Respiratory Protection Standard (29 CFR 1910.134).

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.

SECTION 9- Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Physical Form	Viscous liquid which forms off-white to yellowish foam upon release.
Color	Crème. Some products contain a dye or colorant.
Odor	Slight fluorocarbon odor during curing stage
Odor Threshold:	No data available
Physical State:	Gas/Pressurized Liquid/Semi-Solid
pH:	No data available
Melting Point/Freezing Point	No data available
Initial Boiling Point and Boiling Range	HFO-1234ze -19°C (-2.2°F). Other components boil at 93.3°C (200°F)
Flash Point:	Use of non-flammable propellant
Evaporation Rate:	No data available
Flammability:	Non-flammable
Lower Flammability/Explosive Limit:	No data available
Upper Flammability/Explosive Limit:	No data available
Vapor Pressure	Aerosol product > 50 psig/ 345 kPa
	Final product (sprayed): Very low (not determined)
Vapor Density:	Not available
Relative Density/Specific Gravity:	~ 1.1 (Water = 1)
Solubility:	Insoluble; reacts slowly with water during cure, liberating traces of CO_2
Partition coefficient: n-octanol/water:	No data available
Auto-ignition Temperature:	No data available
Decomposition Temperature;	No data available
Viscosity:	No data available
Oxidizing Properties:	No data available
VOC Content (calculated minus exempt compounds and water)	0 g/l minus exempted compounds

SECTION 10- STABILITY AND REACTIVITY

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability
Stable under normal storage conditions. Contents under pressure. Container may explode if heated. Do not pierce or burn, even after use. Avoid temperatures below 40°F (4°C). For longest shelf life, avoid storage above 100°F (38°C).

10.3 Possibility of Hazardous Reactions
Elevated temperatures can cause product to decompose, releasing carbon dioxide. Flammable propellant. Contents are under pressure and exposure to high temperature can cause containers to rupture or explode.

10.4 Conditions To Avoid
Heat. Incompatible materials. Sources of ignition. Avoid temperatures below 40°F (4°C) or temperatures above 100°F (38°C).

10.5 Incompatible Materials
Alcohols, strong bases, amines, metal compounds, ammonia, and strong oxidizers.

10.6 Hazardous Decomposition Products
See Section 5.2 for hazardous decomposition products due to combustion.

SECTION 11- TOXICOLOGICAL INFORMATION

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:

Eye: May cause eye irritation.
Skin: May cause skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause an allergic reaction. Prolonged skin exposure is unlikely to result in absorption of harmful amounts.
Inhalation: May be harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Inhalation of propellant may cause headache, lightheadedness and lethargy.
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

Acute inhalation toxicity
Expected to have low acute inhalation toxicity
Acute dermal toxicity
Expected to have low acute dermal toxicity
Skin irritation
Causes skin irritation
Eye irritation
Causes serious eye irritation
Sensitization
May cause skin and respiratory sensitization
Genotoxicity
Genetic toxicity data for MDI is inconclusive. Some in-vitro studies yielded positive results, while other test data was 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 Delayed, Immediate, and Chronic Effects of Short and Long Term Exposure
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^3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

Other: This product has not been tested. The above information has been derived from the properties of the individual components.

SECTION 12- ECOLOGICAL INFORMATION

12.1 Ecotoxicity
The aquatic toxicity of this product has not been experimentally determined. However, it is expected to have low acute aquatic toxicity based on the acute aquatic toxicity of the individual components and their concentration in this mixture.
12.2 Persistence and degradability
Product is not readily biodegradable. In aquatic and terrestrial environments, this material reacts with water, which forms predominately insoluble polyureas.
12.3 Bioaccumulative potential
Bioaccumulation potential is low
12.4 Mobility in soil
Expected to have low mobility based on product's reactivity with water
12.5 Results of PBT and vPvB assessment
No data available
12.6 Other Adverse Effects
No data available

SECTION 13- DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods
Methods of disposal
Before disposing of containers, relieve container of any remaining foam and pressure. Allow dispensed product to fully cure before disposing. Never discard in a liquid state. This material must be disposed of in accordance with all local, regional, national, international regulations.
Other disposal recommendations:
Do not puncture or incinerate containers. Use appropriate Personal Protective Equipment.

SECTION 14- TRANSPORTATION

Shipping Information

	Containers Greater Than 1000 cu. cm. (1 liter):
Ground	UN3500 Chemical Under Pressure n.o.s (Fluorinated Hydroolefin, Nitrogen) 2.2 (Non-flammable Gas Label)
Air	UN3500 Chemical Under Pressure n.o.s (Fluorinated Hydroolefin, Nitrogen) 2.2 (Non-flammable Gas Label)
Water	UN3500 Chemical Under Pressure n.o.s (Fluorinated Hydroolefin, Nitrogen) 2.2 (Non-flammable Gas Label)

SECTION 15- REGULATORY

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 a 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: Acute Health Hazard, Chronic Health Hazard, Reactive Hazard, Sudden Release of Pressure Hazard

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: 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

Canada Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation, and the SDS contains all the information required by the Controlled Products Regulations.

Canadian Ingredient Disclosure List (IDL): 4,4'- Diphenylmethane diisocyanate (CAS #101-68-8) is listed on the IDL.

Canadian National Pollutant Release Inventory (NPRI): MDI and PMDI are listed on the NPRI

Global Chemical Inventory Lists:

United States: Toxic Substance Control Act (TSCA)- Yes

Canada: Domestic Substances List (DSL)- Yes

Canada: Non-Domestic Substances List (NDSL)- No

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

SECTION 16- OTHER

NFPA: Health Hazard 2; Flammability 1; Reactivity 1
HMIS: Health Hazard 2; Flammability 1; Physical Hazard 1
Hazard Rating: 0=minimal, 1= slight, 2=moderate, 3=severe, 4= extreme

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