

SAFETY DATA SHEET
POLYURETHANE FOAM SYSTEM
A-SIDE COMPONENT HVLP PIP, GEO, HFO, HY



SECTION 1- IDENTIFICATION

1.1 Product Identifier

Product Name: HandiFoam HVLP GEO, HandiFoam HVLP PIP, HandiFoam HVLP MD 2.0 HFO, HandiFoam HVLP Low Density and HandiFoam HVLP 1.6 High Yield

ID SDS: SD008A

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

General Use Polyurethane Foam System, 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 Building Solutions Group

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 2B

Acute Toxicity Inhalation- Category 4

Respiratory Sensitizing- Category 1

Specific Target Organ Toxicity, Single Exposure -Category 3 (STOT SE 3)

Specific Target Organ Toxicity, Repeated Exposure- Category 2 (STOT RE 2)

2.2 Label elements

Hazard Symbols:



Signal Word:

DANGER

Hazard Statements:

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H320 Causes 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 (respiratory tract) through prolonged or repeated exposure

Prevention:

P202 Do not handle until all safety precautions have been read and understood

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 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

P284 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.

P308+P313 IF exposed or concerned: Get medical advice.

- P314 Get medical attention if you feel unwell
 P337+P313 If eye irritation persists: Get medical attention
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
 P362 Take off contaminated clothing and wash before reuse.

Storage:

- P405 Store locked up
 P233 Keep container tightly closed
 P410+P403 Protect from sunlight. Store in a well-ventilated place.

Disposal:

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

Other hazards:

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

SECTION 3-COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical characterization (preparation):

% by Weight	Ingredient	CAS No.
50-70	Polymethylene polyphenyl isocyanate	9016-87-9
30-50	4,4' Diphenylmethane diisocyanate	101-68-8

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:** If product vapors cause respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen. If respiratory arrest occurs, start artificial respiration by a trained individual. Loosen tight fitting clothing such as a jacket or tie. Seek medical attention immediately. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening. Persons receiving significant exposure should be observed for 24-48 hours for signs of respiratory distress.
- 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, 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

If case of an accident or if you feel unwell, seek medical advice immediately (show label or SDS if possible). Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high propellant concentrations (enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe victim for the development of cardiac arrhythmias.

SECTION 5- FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: Use dry chemical, carbon dioxide, alcohol resistant foams and water spray

Unsuitable methods of extinction: None

5.2 Special hazards arising from the substance or mixture

Drums may explode due to the buildup of pressure when exposed to extreme heat. During a fire, isocyanate vapors or other irritating, 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: Nitrogen oxides, Hydrogen cyanide, Carbon monoxide, and Carbon dioxide.

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. Eliminate sources of ignition. Ventilate the area.

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 & disposal, see Section 13

See Section 7 for information about safe handling

SECTION 7- HANDLING AND STORAGE

7.1 Precautions for safe handling

For Industrial or professional use only. Observe label precautions, do not use until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray during application. Use adequate ventilation to keep airborne isocyanate levels below exposure limits. Recommend wearing respiratory protection when spraying this material. Warning symptoms (irritation of the eyes, nose, or throat, or odor) are not adequate to prevent overexposure from inhalation. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed. Avoid contact with skin or eyes. Wear appropriate personal protective equipment during use (see Section 8). Wash thoroughly after handling product. Danger of bursting when sealed tight. Protect against moisture. If bulging of drum occurs, transfer to well-ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

Advice on protection against fire and explosion

Exposure to high temperatures can cause drums to bulge, rupture or explode.

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). Storage temperature is 32-100°F (0-38°C). Products stored below 60°F (16°C) or above 90°F (32°C) must be given adequate time to warm up/cool down. Do not expose the cylinders /kits 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 unused product from freezing. Storage below 60°F (16°C) may affect foam quality if chemicals are not warmed to room temperature before using. Protect cylinders from physical abuse. Always store the cylinders in the upright position. **KEEP OUT OF REACH OF CHILDREN.**

SECTION 8- EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control Parameters

Ingredient	CAS Number	OSHA-PEL	ACGIH-TLV	Other
4,4' Diphenylmethane diisocyanate	101-68-8	0.2 mg/m ³ ; 0.02 ppm CEIL	0.051 mg/m ³ ; 0.005 ppm (8 hours TWA)	NIOSH- 0.2 mg/m ³ ; 0.02 ppm CEIL 0.051 mg/m ³ ; 0.005 ppm TWA

8.2 Exposure controls:

Engineering Controls: Use local and general exhaust ventilation to control levels of exposure. See ICP Ventilation Guidelines.

Eye/face Protection: Wear protective goggles or safety glasses with side shields.

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: Atmospheric levels should be maintained below the exposure guidelines. Use products only in a well-ventilated area. Engineering and administrative (work practices) controls should be implemented to protect the workers. If atmospheric levels are expected to exceed the exposure levels, use a NIOSH approved air purifying respirator equipped with an organic vapor cartridge and a 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). The odor and irritancy of this material is inadequate to warn of excessive exposure.

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.

SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	
General Physical Form	Amber to dark brown liquid
Odor	Slightly musty, aromatic
Odor Threshold	No data available
pH	No data available
Freezing Point	37°F (3°C)
Initial Boiling Point and Boiling Range	MDI boils at 392°F (200°C)
Flash Point	MDI 428°F (220°C)
Evaporation Rate	No data available
Flammability	Not flammable
Lower Flammability/Explosive Limit	Not available
Upper Flammability/Explosive Limit	Not available
Vapor Pressure of Liquid	Liquid phase vapor pressure: 0.00016 mmHg @ 20°C (68°F)
Vapor Density	Not applicable
Density	~ 1.23 g/cm ³ @ 20°C
Relative Density/Specific Gravity	~ 1.22 g/cm ³ @ 20°C (Water = 1)
Solubility in water	Reacts with water
Partition coefficient: n-octanol/water	No data available
Auto-ignition Temperature	>482°F (>250°C)
Decomposition Temperature	No data available
Viscosity	200 mPa.s
Molar Mass	360 g/mol
Evaporation Rate	Value can be approximated from Henry's Law Constant or vapor pressure

SECTION 10- STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

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

Avoid moisture, material reacts slowly with water releasing carbon dioxide. Risk of bursting. Reacts with alcohols. Reacts with acids. Reacts with alkalis. Reacts with amines. Risk of exothermic reaction. Risk of polymerization. Contact with certain rubbers and plastics can cause brittleness of the substance/product with subsequent loss in strength. Contents are under pressure.

10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

Alcohols, acids, strong bases, alkalines, amines, metal compounds, ammonia, and strong oxidizers. Avoid contamination with water.

10.6 Hazardous decomposition products

See Section 5.2 for hazardous decomposition products related 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:

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: >2000 mg/kg

Acute inhalation toxicity

At room temperature, vapors are minimal. Aerosol Testing. 4,4'- Diphenylmethane diisocyanate: LC50, rat: 2.0mg/l

Acute dermal toxicity

Expected to have a low acute dermal toxicity. 4,4'- Diphenylmethane diisocyanate: LD50, rabbit: >9400 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 aspiration hazard expected

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/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

SECTION 12- ECOLOGICAL INFORMATION

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

SECTION 13- DISPOSAL CONSIDERATIONS**13.1 Waste Treatment Methods**

Always wear proper protective equipment as you would while spraying the two-component foam in a well-ventilated area.

Procedure for handling drums:

Steel drums must be emptied and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove. Under no circumstances should empty drums be burned or cut open with gas or electric torch as toxic decomposition product may be liberated. Do not reuse empty containers.

SECTION 14- TRANSPORTATION

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

Ground	Not classified as a dangerous good under transport regulations
Air	Not classified as a dangerous good under transport regulations
Water	Not classified as a dangerous good under transport regulations
This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). See section 15 for the RQ of this product.	

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 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: Refer to Section 2 for GHS Hazard classes applicable for this product.

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 : RQ 5000 lbs.

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 ingredients 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

15.2 Chemical safety assessment: For these products, 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

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

Gases Under Pressure- Compressed Gas

Skin Irritation- Category 2

Skin Sensitization- Category 1

Eye Irritation- Category 2B

Acute Toxicity Inhalation- Category 4

Respiratory Sensitizing- Category 1

Specific Target Organ Toxicity, Single Exposure -Category 3 (STOT SE 3)

Specific Target Organ Toxicity, Repeated Exposure- Category 2 (STOT RE 2)- Inhalation

SPF- Spray Polyurethane Foam

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 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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