

# UDC

## Product Development and Manufacturing

UDC was founded in 1966 as a research and development firm. Utilizing over 35 years of experience, UDC has developed and commercialized a number of novel products in the field of plastics and assisted companies throughout North America in finding unique solutions for their everyday needs.

UDC's main office is located in a 5,000 square foot lab in Livingston, NJ specializing in product development and manufacturing. A team of engineers and chemists continue to develop new products and provide customers with technical expertise and assistance whenever requested.

UDC manufactures a wide range of products including syntactic foams, release coatings, specialized adhesives, and electronic potting compounds and encapsulants which have found use throughout various industries in North America.

## Synfoam High Performance Syntactic Foam

SynFoam consists of hydrospace quality hollow glass microspheres dispersed in a high strength plastic matrix. Upon curing the resultant syntactic foam composite provides high strength and low density with very low moisture absorption.

Synfoam is frequently used in the marine industry for use as floats, buoys and as a void filler in submarines, capable of withstanding depths below 7,000 feet. Synfoam finds use in aerospace industries as cores for sandwich structures and as a repair and replacement for existing honeycomb structures. General industrial uses include use as a tooling material, offering the workability of wood with the dimensional stability of metal. SynFoam permits overall vehicle weight reduction, reducing fuel consumption and increasing payload capacity and is suitable for use a high strength to density ratio is required

UDC has focused on the development of extremely lightweight foams with good retention of strength, offering a unique, low cost alternative to other syntactic foams on the market.

Synfoam is available as either a two component, pack in place or pour mixture which can be molded into complex shapes and further machined by the end user or as fully cured, high performance, 6" x 12" x 24" blocks, which can be machined into different shapes and sizes.

# SynFoam UL

## Ultra Low Density for Demanding Weight Requirements

Synfoam UL finds use in applications where moderate strength and extremely low density for improved buoyancy are required. It is also ideal for use as cable insulation and in applications where high speed sound transmission is desired.

Ultra low density syntactic foams are provided as cured 6" x 12" x 24" blocks. Utilizing an experienced team of molding experts, Synfoam UL provides the highest possible performance at such a low density. Densities are customized to the users specifications.

Synfoam UL may be machined into different sizes and shapes to meet the tolerances and requirements of the end user.

### Typical Properties of SynFoam UL

<b>PROPERTY</b>	<b>UNITS</b>	<b>UL-10</b>	<b>UL-15</b>	<b>UL-20</b>
Density	pcf	10	15	20
Compressive Strength	psi	500	1200	1800
Compressive Modulus	psi	30,000	70,000	110,000
Depth Rating	feet	300	650	1000
Acoustic Impedance	Mrayls (1 MHz)	0.50	0.61	0.71

# SynFoam HP

## High Strength Syntactic Foam for Demanding Applications

SynFoam HP products provide high strength and low density for a number of marine and aerospace applications. The high strength values allow SynFoam HP to be effectively used for most underwater vehicles and has been used in naval submarines. Synfoam HP-24 is qualified for use under specification Mil-S-24154A. It is ideal for use in applications that require weight reduction and little reduction of strength such as being used as a core for sandwich structures. Densities can be customized to the users specifications.

Synfoam HP is available as 6" x 12" x 24" fully cured blocks. A team of experienced molders ensures the highest possible performance of syntactic foams at densities above 22 pcf. The blocks may be further machined into different sizes and shapes to meet the tolerances and requirements of the end user.

### Typical Properties of SynFoam HP

<b>PROPERTY</b>	<b>UNITS</b>	<b>HP-24</b>	<b>HP-35</b>	<b>HP-42</b>
Density	pcf	24	35	42
Compressive Strength	Psi	3,000	4,000	8,000
Compressive Modulus	Psi	200,000	250,000	300,000
Depth Rating	Feet	2,500	4,000	7,000
Acoustic Impedance	Mrayls (1 MHz)	0.91	1.19	1.32

# SynFoam SG

## Uncured, Castable Syntactic Foam for Everyday Applications

Synfoam SG is a cost effective syntactic foam providing low density and moderate strength. It is suitable for numerous marine and aerospace applications. Synfoam SG is shipped as 2 components which, when mixed together, can be either packed in place or poured into complex molds.

Due to its room temperature cure, Synfoam SG is ideal for field repair and to eliminate coefficient of thermal expansion (CTE) problems that will arise with elevated temperature cures of syntactic foam. Synfoam SG exhibits extremely low shrinkage and offers high adhesion to most substrates. Cure is achieved within 24 hours and full properties will be realized after 7 days at room temperature.

### Typical Properties of SynFoam SG

<b>PROPERTY</b>	<b>UNITS</b>	<b>SG-35</b>	<b>SG-40</b>	<b>SG-45</b>
Density	pcf	35	40	45
Compressive Strength	psi	3,000	4,000	5,000
Compressive Modulus	psi	150,000	200,000	250,000
Depth Rating	Feet	3,000	4,000	5,000
Acoustic Impedance	Mrayls (1 MHz)	1.30	1.42	1.57

# SynFoam HT

## Syntactic Foam for Extreme Temperature Applications

High temperature Synfoam is safe for the most demanding temperature applications. HT series Synfoam has a large operating range between -65°F and 400°F featuring a high Tg and low CTE. In addition to marine and weight reduction uses, HT Synfoam also finds use in the microwave industry as an insulator due to its low dielectric properties.

The castable grade is stable at room temperature for a number of weeks and can be fully cured within 2 hours at 250 °F. The system has a heavy flake like consistency and can be packed in place and cured in complex molds.

The cured grade of Synfoam may be machined into different sizes and shapes to meet the tolerances and requirements of the end user. It is available in 12”X12” blocks.

### Typical Properties of SynFoam HT

<b>PROPERTY</b>	<b>UNITS</b>	<b>HT-14</b>	<b>HT-17</b>	<b>HT-19</b>
Density	pcf	14	17	19
Compressive Strength	psi	500	950	1350
Tg	°C	200	200	200
Dielectric Constant		1.25	1.34	1.45

## Disclaimer

The information in this brochure, although believed to be accurate, is not to be taken as a warranty for which Utility Development Corporation assumes legal responsibility. Each user bears the full responsibility for making its own determination as to the suitability of the Supplier's materials, products, services, recommendations, or advice for its own particular purpose. Each user is advised to identify and perform tests and analyses sufficient to assure it that its finished parts will be safe and suitable for use. Because actual use of products is beyond the control of the Supplier, such use is within the exclusive responsibility of the user, and Supplier cannot be held responsible for any loss incurred through incorrect or faulty use of the products. Further, no statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended or should be construed to grant any license under any patent or other intellectual property right of Supplier or any of its subsidiaries or affiliated companies, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

## For Additional Information

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### **Pricing and Availability**

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