

ECOPEARL SHPU-35-34A

General Properties and Applications

Ecopearl SHPU-35-34A is a formulated polyol used to produce spray foam insulation in multi layers for roofing, wall and basements with a density of 35-40 kg/m³. It contains all the raw material and auxiliaries necessary for the production of rigid polyurethane foam including the blowing agent HCFC. The actual performance of the system may vary depending upon the processing conditions.

Sampling

Moisture access should be prevented, formulation should be agitated before sampling.

Other Data*

Property	Value	Unit of measurement	Method
Density 25 °C	1.16 ± 0.02	g/ml	PPS-QC-002
Viscosity 25 °C	220 ± 50	mPa.s	PPS-QC-003

* These values provide general information and are not part of the product specification

Packaging

200 Liter steel drums

Storage

Shelf life from time of delivery: 6 months provided if it is stored in proper sealed tight containers where moisture cannot enter.

Recommended storage temperature: 20-25°C

Labeling and REACH applications

This product data sheet is only valid in conjunction with the latest edition of the corresponding Safety Data Sheet. Any updating of safety-relevant information – in accordance with statutory requirements – will only be reflected in the Safety Data Sheet, copies of which will be revised and distributed. Information relating to the current classification and labeling, applications and processing methods and further data relevant to safety can be found in the currently valid Safety Data Sheet.

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Directions for Processing

Ecopearl SHPU-34-34A Spray systems are designed for processing on high and low pressure machines that are able to work at mixing ratios of 1:1 by volume, the machine parameters have to be selected in such way to ensure proper mixing.

Environmental Consideration and Substrate Temperatures:

Applicators must recognize and anticipate climatic conditions prior to application to ensure highest quality foam and to maximize yield. Ambient air and substrate temperatures, moisture and wind velocity are all critical determinants of foam quality. Extreme ambient air and substrate temperature will influence the chemical reaction of the two components, directly affecting the yield, adhesion and the resultant physical properties of the foam insulation. To obtain optimum results, Ecopearl Spray should be spray-applied to substrates when ambient air and surface temperatures are between 10°C and 50°C. All substrates to be sprayed must be free of dirt, soil, grease, oil and moisture prior to the application of Ecopearl Spray. Moisture in any form: excessive humidity (>85% R.H.) rain, fog, or ice will react chemically and adversely affect system performance and corresponding physical properties. Application should not take place when the ambient temperature is within 3°C of the dew point. Wind velocities in excess of 20 km per hour may result in excessive loss of exotherm and interfere with the mixing efficiency of the spray gun affecting foam surface texture, curing, physical properties and will cause overspray. Precautions must be taken to prevent damage to adjacent areas from fugitive overspray.

Applicators should ensure the safety of the jobsite and construction personnel by posting appropriate signs warning that all "hot work" such as welding, soldering, and cutting with torches should take place no less than 35 feet from any exposed foam. If "hot work" must be performed all spray polyurethane foam should be covered with an appropriate fire or welder's blanket, and a fire watch should be provided.

Processing Equipment:

2:1 transfer pumps are recommended for material transfer from container to the proportioner. The plural component proportioner must be capable of supplying each component within $\pm 2\%$ of the desired 1:1 mixing ratio by volume. Hose heaters should be set to deliver 50°C to 55°C materials to the spray gun. These settings will ensure thorough mixing in the spray gun mix chamber in typical applications. Optimum hose pressure and temperature will vary with equipment type and condition, ambient and substrate conditions, and the specific application. Some equipment may require you to heat drums to achieve optimum material temperature. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that

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relates acceptable combinations of gun chamber size, proportioner output, and material pressures. The relationship between proper chamber size and the capacity of the proportioner's pre-heater is critical. Contact your machine supplier representative for specific recommendations, pricing, and availability of spray and auxiliary equipment.

Per Pass Application:

Applicators should limit Ecopearl Spray thickness to 1.5 cm per pass and recommended thickness is <1.5 cm per pass for optimal processing and physical properties.

Handling and Safety:

Respiratory protection is MANDATORY! Contact Pearl Polyurethane for a copy of the Model Respiratory Protection Program developed by API or visit their website at www.polyurethane.org. Avoid contact with skin, eyes, and clothing. Open containers carefully, allowing any pressure to be relieved slowly and safely. Wear chemical safety goggles and rubber gloves when handling or working with these materials. In case of eye contact, immediately flush with large amounts of water for at least fifteen minutes, consult a physician immediately. In case of skin contact, wash area with soap and water. Wash clothes before reuse.

Guide formulation	parts by weight	parts by volume
Ecopearl SHPU-35-34A	100	100
SYSTEM ISO 44V20L	106	100
Foaming data by the hand mixing method at raw material temperature of 22°C		
Cream time	4 ± 1	Seconds
Tack free time	11 ± 2	Seconds
Free Rise Density	24 ± 1	kg/m ³
Applied density	approx. 35-40	kg/m ³

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Typical Properties for a spray foam produced using SHPU-35-34A and SYSTEM ISO 44V20L -

Sprayed Foam Density	35-40	kg/m ³
Compressive Strength	≥ 100	kPa
Corrected Closed cell Content	≥ 90	%

The methods described in this publication for testing the fire performance of polyurethane and the results quoted do not permit direct conclusions to be drawn regarding every possible fire risk there may be under service conditions.

Furthermore, this does not release the producer of the finished parts from his obligation to carry out suitable tests on his end product with respect to fire performance and/or fire risk in order to guarantee conformity with the required fire safety standard.

These values are given only as a guide and must be verified in each individual case on finished parts manufactured under the processor's production conditions.

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Pearl Polyurethane Systems LLC. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

This product is not designated as „Medical Grade“ and therefore shall not be considered a candidate for the manufacture of a medical device or of intermediate products for medical devices, which are intended under normal use to be brought into direct contact with the patient's body (e.g., skin, body fluids or tissues, including indirect contact to blood)*. [This product is also not designated for Food Contact (1), including drinking water, or cosmetic applications. If the intended use of the product is for the manufacture of a medical device or of intermediate products for medical devices, for Food Contact products or cosmetic applications Pearl Polyurethanes Systems LLC must be contacted in advance to provide its agreement to sell such product for such purpose.]

Nonetheless, any determination as to whether a product is appropriate for use in a medical device or intermediate products for medical devices, for Food Contact products or cosmetic applications must be made solely by the purchaser of the product without relying upon any representations by Pearl Polyurethane Systems LLC.

1) As defined in Commission Regulation (EU) 1935/2004.

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