

Castorthane 35S

Low-Density Spray Moulding Foam

Prop & Theme Spray Foam System – Renewable Resource Based

Castorthane 35S is a Climate Friendly spray foam system formulated with HFO as the blowing agent which has zero ozone depleting potential, extremely low GWP and utilises both recycled industrial plastics and consumer scrap bottles.

Castorthane 35S rigid prop and theme spray foam is a new generation high performance rigid insulation and moulding foam incorporating **14% renewable resource plant oil**.

Castorthane 35S is a fire retarded foam with good self-extinguishing properties, coupled with low thermal conductivity and permeability, good mechanical strength, chemical resistance and dimensional stability.

The reactivity profile of **Castorthane 35S** has been designed to provide optimum coverage (yield) in comparatively cold application conditions and on metal substrates. Suitable for thin film initiation and DTV (direct to vertical) substrates. **Castorthane 35S** is formulated with a degree of green strength flexibility to enable spray moulded articles, panels etc to be demoulded easily and rapidly.

TYPICAL LABORATORY REACTION & PROPERTIES

Mixing ratio:

Endurathane SR42S 100 pbv
Endurathane Part A / MDI 100 pbv

Laboratory reaction profile at 21°C:

Cream time (sec): 4-5
Gel time (sec): 10-14
Rise time (sec): 20-25
Free Rise core Density (kg/m³): 32-34

Typical liquid properties at 21°C:

Test:	Part A	Part B
Viscosity: (cPs)	200-250	320-360
Specific Gravity:	1.24	1.12
Appearance:	Brown liquid	Amber liquid

Typical recycled content in foam system by weight:

Pre Consumer: 3.93%
Post Consumer: 3.44%
Total: 7.36%

RECOMMENDED USES

Applications include:-

Stage/studio prop creation

NOTE: All exterior applications should be protected against weather exposure by sheathing or covering with a monolithic membrane. Consult your PGL representative for advice.

As polyurethane foam products may constitute a serious fire hazard if improperly used or protected, a careful assessment should be made to determine what potential hazard may exist.

Cured Foam:

- Density, free rise core 34-35 kg/m³
- Thermal Conductivity (W/m °C) 0.022-0.023
- Compressive Strength 110kN/m²
- Closed Cells 90-95%
- Dimensional Stability
 - 24 hrs @ 100°C 1-5%
 - 24 hrs @ -40°C 0%
 - 24 hrs @ 70°C/100% RH 0-5%
- Water Absorption (23°C/kg/m²) 0.49
- Water Vapour Permeability 1.8 (Perm-in.....ASTM C-355 @ 23°C)
- Flammability
- ASTM D1692 Self extinguishing



PACKAGING

A: Nett 250 kg per 200 litre drum.
B: Nett 225 kg per 200 litre drum.

With an ultra-low global warming potential, Endurathane SR42S utilises HFO-1233ze(E) which has a GWP of <1.0 resulting in an insulation foam <99% of traditional HFC blown foams.

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Castorthane 35S is machine-applied through two component polyurethane application equipment such as Reactor Fusion or similar. Please consult your technical representative for advice regarding any equipment application questions you may have.

Equipment: Reactor Fusion

Primary Heater: Part A (Isocyanate) 40-50°C
Part B (Polyol) 40-50°C

Hose Temperature: 40-50°C

Optimum temperatures will vary with equipment, substrate temperature and ambient conditions generally. Check and maintain correct output ratio to $\pm 2\%$.

Substrates:

Castorthane 35S may be applied over most surfaces. Substrates must be clean and dry. Where adhesion is at all doubtful a suitable primer should be applied first. Contact your Technical Representative for advice. Water in any form will react adversely with the components. **Ambient and surface temperatures** should be above 15°C. **Low temperatures will decrease yield markedly.**

Theoretical Coverage:

Always check yield and coverage rates at start of job and then regularly during application to ensure product coverage is as expected. Pay special attention when spraying on to a profiled substrate to determine the "flat" area to be sprayed. This can often be as much as 25% greater than the measured area. Similarly adequate allowance must be made for spraying losses especially when working outside. It is not recommended to spray when wind velocities exceed 5 km/hr.

1 kg of foam occupies **0.0286m³ (0.57m² @ 50 mm)** applied under ideal conditions (1m² = **1.75kg @ 50mm**).

STORATGE AND HANDLING PRECAUTIONS



ALL CHEMICALS MUST ONLY BE USED BY TRAINED PERSONNEL.

Component A [isocyanate] contains methylene bisphenyl di-isocyanate [MDI]. It must be stored securely and not available to the public.

Component B [polyol] contains HFO volatile blowing agent. To prevent loss of HFO by evaporation, and to prevent ingress of moisture, drums must be kept tightly sealed when not in use. When opening a container, care must be taken to release any internal pressure slowly.

Provide ventilation or use only in well ventilated situations.

Endurathane Part A or Suprasec 5005 isocyanate will react with water to produce carbon dioxide gas. As a result drums contaminated with water should not be sealed.

Materials Protection System

Spray foam chemicals are either hygroscopic or reactive to moisture and a nitrogen gas purge of desiccant dryer system should be used to prevent moisture vapour entering the drums through the small bung holes. (Component A: If exposed to moisture will crystallise in hoses resulting in line blockages).

Clean up:

Owing to the chemical resistance of polyurethane products it is important to clean up any overspray as quickly as possible. **Methyl Proxitol** is suitable for general cleaning and **Machine Flush** can be used as a line flush. Wear suitable protective clothing, goggles and gloves at all times when cleaning. Greasing components beforehand assists with contamination removal.

Storage Stability

Recommended storage temperature is 10-25°C in tightly closed containers to prevent moisture and other contamination. Under these conditions this product has a storage stability of at least 6 months.

Store out of direct sunlight and away from all sources of heat.

HEALTH AND SAFETY ADVICE



Refer to Polymer Group Safety Data Sheets for individual products.

HFO – Ultra-Low Greenhouse Gas Emissions

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Component A [isocyanate] contains methylene bisphenyl di-isocyanate [MDI]. It is moderately toxic. **Avoid contact with skin or eyes, avoid breathing any vapour** and use only in well ventilated areas with respiratory protection.

Component B [polyol] contains HFO volatile blowing agent. It is a mild irritant. In confined spaces it may displace sufficient air to be hazardous. Provide ventilation or use only in well ventilated situations.

Always wear **eye and breathing protection** (full face respirator with disposable lens covers) and suitable **protective clothing** ie, disposable overalls, gloves and boots.

Flush splashes to the skin or eyes with copious quantities of water.

