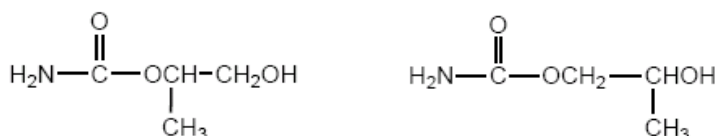


**Technical Bulletin****CARBALINK<sup>®</sup> HPC  
HYDROXYPROPYL CARBAMATE**

**CARBALINK<sup>®</sup> HPC** is a clear, slightly yellow, slightly viscous liquid.

**APPLICATIONS**

CARBALINK<sup>®</sup> HPC is an intermediate used to introduce primary carbamate linkages into polyacrylate or polyurethane resins. These resins can then be further crosslinked with melamine/formaldehyde or urea/formaldehyde to produce useful coating compositions.<sup>1</sup>

**SALES SPECIFICATIONS**

<u>Property</u>	<u>Specifications</u>	<u>Test Method*</u>
Alkalinity, as wt% NH <sub>3</sub>	0.28 max.	ST-31.41, D
Color, Pt-Co	250 max.	ST-30.12
Hydroxypropyl Carbamate, Area%	95 min.	ST-35.204
Propylene Carbonate, Area%	2.5 max	ST-35.204
Propylene Glycol, Area%	2.0 max.	ST-35.204
Water, wt%	0.2 max.	ST-31.53

\*Methods of Test are available from Huntsman Corporation upon request.

**ADDITIONAL INFORMATION****Regulatory Information**

See SDS for all regulatory information.

**Typical Properties**

Flash point, PMCC, °C (°F)	171 (340)
Boiling point, °C (°F)	>177 (>350)
Freezing range, °C (°F)	-5 - +10 (23 - 50)
pH	> 7
Specific gravity	1.2
Viscosity, cSt, 25°C (77°F)	87.4
Water solubility, %	> 10

## TOXICITY AND SAFETY

For additional information on the toxicity and safe handling of this product, consult the Safety Data Sheet prior to use of this product.

## STORAGE AND HANDLING

CARBALINK<sup>®</sup> HPC is a compound made from propylene carbonate and ammonia. This is an equilibrium reaction which contains a minimum of 95% HPC at ambient conditions. It may contain up to 0.28% ammonia and less than 2% unreacted propylene carbonate. The presence of ammonia is a factor in keeping the equilibrium of the reversible reaction shifted toward the carbamate.

Drum bungs should be secured tightly except when heating. If CARBALINK<sup>®</sup> HPC is held at elevated temperatures for extended periods of time, a side reaction can occur in which the level of propylene glycol can build up, surpassing the specification limit of 2%.

Since the CARBALINK<sup>®</sup> HPC product freezes slightly below room temperature, it often becomes necessary to heat a drum in order to restore the product to its liquid state. The heat should be applied as gently as possible. Typically a 60°C (140°F) hot box can melt an entire drum overnight. Hotter temperatures should be avoided. If heating coils are employed, use tempered water instead of steam. If electrical heating strips are used, make sure the controls allow a low heat flux for a longer period. Due to the presence of the ammonia generated by the reverse reaction, drums should be vented and a suitable fume handling system utilized to avoid over pressuring the drums when heating.

Ideally, drums can be stored in their frozen state. We have not been able to detect degradation of samples stored for long periods of time when frozen. Once frozen, the melting point is somewhat higher than room temperature. Drums left in the hot sun may start to degrade after one or two months.

## AVAILABILITY

CARBALINK<sup>®</sup> HPC is available in drums. Samples are available by contacting our sample department at 1-800-662-0924.

## REFERENCES

- 1) U.S. Patent 5,373,069

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