

SOLKANE® 365/227

Foaming Agent for Reefer Production

SOLKANE®



SOLKANE® 365/227 foaming agent is the alternative of choice for the reefer container production when replacing 141b. In China, HCFC 141b foaming agent for reefer production will be phased out in 2015. The industry is looking for a solution that considers both improved environment protection and optimized reefer container performance. Factors under consideration for a replacement to 141b are: 1. ODP, GWP Production safety includes: non-flammable, preferred boiling point) and Production conversion economics – minimal cost for facility modification

- Energy efficiency (aged thermal conductivity of foam and heat leakage of reefer container) that contributes to the energy consumption during entire working life of the reefer container (both 1st and 2nd life).
- Working life factors of container such as compressive strength of foam and elastic/permanent deformation of container

Environmental properties

	141b	SOLKANE® 365/227	245	Cp
Λ [mW/m·K]	10.1	10.6	12.2	12.0
ODP	0.11	0	0	0
GWP, 100yr	725	804	1,030	11

SOLKANE® 365/227 has the best insulation value of a new blowing agent with the highest effect in saving CO₂ for the environment.

Production

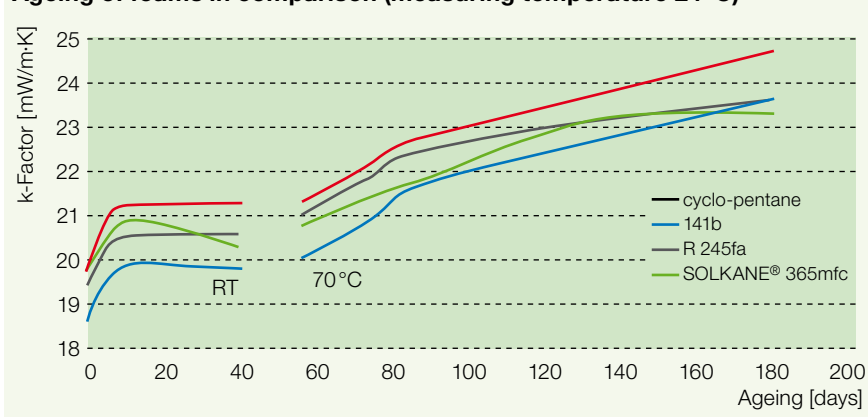
SOLKANE® 365/227 foaming agent works as a true non-flammable liquid. Minimal modification of foaming facility is recommended when switching from 141b; SOLKANE® 365/227 has a better fire behavior in foam compared to Cp, thus contributing more safety to reefer container while producing, working and repairing.

	141b	SOLKANE® 365/227	245	Cp
Boiling point	32	30	15	49.5
Flammability	No	No	No	Yes
Facility modification		Explosion-proof pump	Premix station	Explosion-proof equipment
Cost of facility modification		~US \$ 1.5 K	~US \$ 15 K	~US \$ 1.5 million

Energy efficiency

Better insulation value with 365/227 foam results in lower heat leakage of the reefer container. SOLKANE® 365/227 aged foam contributes to higher energy savings of the container during its whole working life. Except the effect of foaming agent, the heat leakage can be improved by changing the structure of container.

Ageing of foams in comparison (measuring temperature 24 °C)



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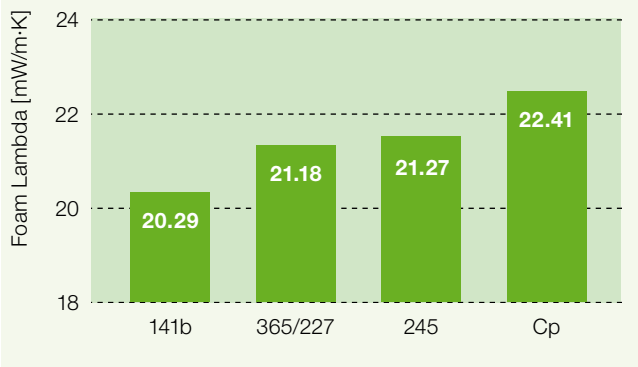
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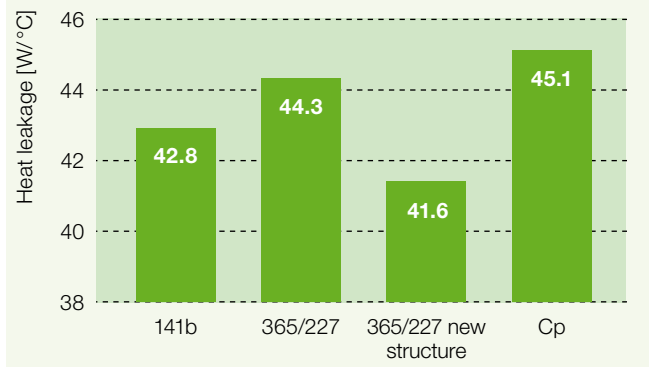
More Information: www.solkane.com



Foam Lambda vs. blowing agent



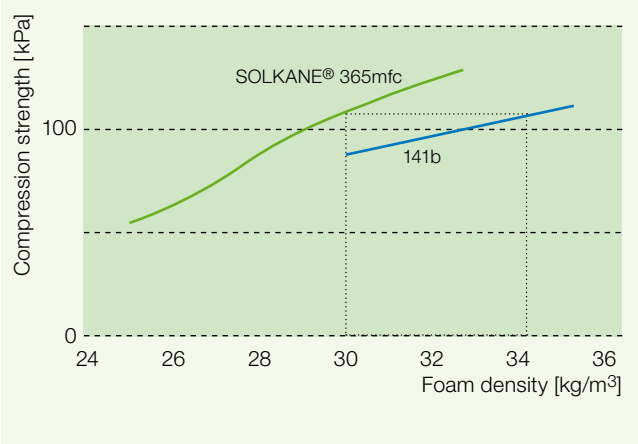
Heat leakage vs. blowing agent



Mechanical strength and dimension stability

SOLKANE® 365/227 shows lower plasticized property, higher compressive strength (see figure below), a very small permanent deformation (see figure below) of the container and foam density reduction all of which potentially leads to prolonged container working life (both 1st and 2nd life).

Influence of blowing agent to comp. strength



Deformation of container vs. foaming agent

