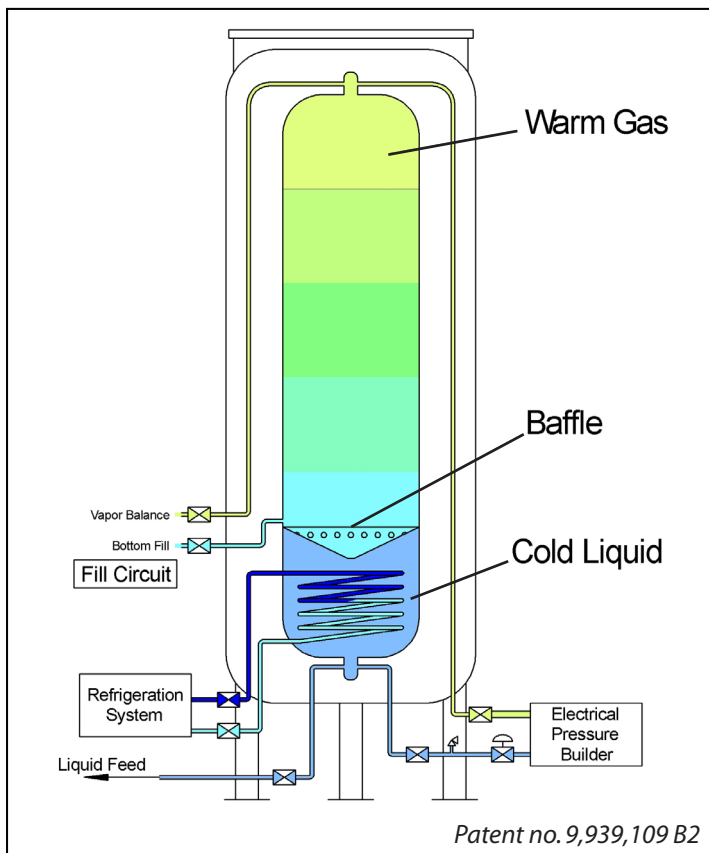


# CHILLZILLA® CO<sub>2</sub>

BULK CO<sub>2</sub> FOOD FREEZING AND DRY ICE PRODUCTION SYSTEM

The ChillZilla® bulk CO<sub>2</sub> Liquid Supply System for food freezing and dry ice production increases the refrigeration capacity of the liquid CO<sub>2</sub> by as much as **24%** over traditional bulk tanks. The ChillZilla system incorporates a patented design to lower the saturation pressure of the liquid output without reducing the delivery pressure. With the aid of an external refrigeration system, an internal heat exchanger coil and an insulating baffle, the temperature of the liquid CO<sub>2</sub> is effectively reduced. This system subcools the saturated liquid CO<sub>2</sub> from 300 psig to 120 psig while the electric pressure builder maintains the high tank vapor pressure necessary for consistent CO<sub>2</sub> delivery to the application. The result is an *increase* in refrigeration capacity in the liquid or an *improved* snow yield from 41 to 51%.



## PRODUCT HIGHLIGHTS

- Reduce liquid CO<sub>2</sub> consumption by as much as 24%
- Reduce bulk tank minimum operating temperature from -40°F to -320°F with stainless steel inner vessel
- T304 stainless steel inner complies with food grade standards
- Improve bulk tank thermal efficiency with vacuum-insulated super insulation system
- Control freezing process more accurately by controlling liquid conditions
- Flexible system control allows lower tank operating pressure to further reduce operating costs
- Reduce deliveries at bulk tank site
- Reduce CO<sub>2</sub> emissions
- Liquid connection: 2" NPS, Python®-Ready



Innovation. Experience. Performance.®

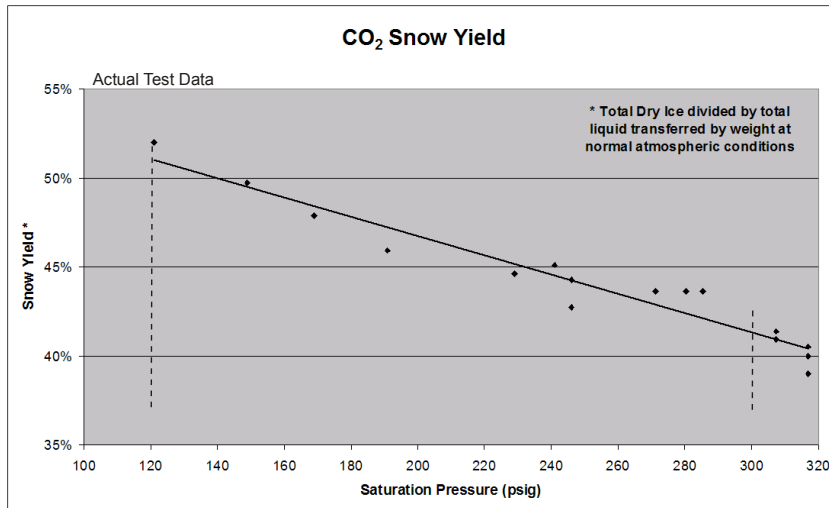
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## Tank Specifications

Model	Gross Capacity		Net Capacity		MAWP*		Height		Diameter		Tare Weight**		NER %/day in CO <sub>2</sub>
	Ton	Tonne	Ton	Tonne	psig	barg	in	mm	in	mm	lbs.	kg	
50 Ton	48.1	43.6	45.8	41.5	350	24.1	406	10,312	114	2,900	56,900	25,810	.04

\*MAWP - Maximum Allowable Working Pressure. \*\*Weights are for ASME design.



## System Requirements

- Chiller: 480 VAC/3Ph/60Hz  
23kW  
230 VAC/1Ph/60Hz  
171" L x 45" D x 56" H  
2500 lbs
- Pressure Builder:  
480 VAC/3Ph/60Hz  
12kW

ChillZilla Savings		50 Ton	
	Units	Carbon Steel/Foam	ChillZilla System
Design Pressure	(psig)	350	350
Design Temperature	(°F)	-40	-320
Dispense Pressure (PB set)	(psig)	300	300
Dispense Saturation Pressure	(psig)	250	120
Refrigeration Energy @ Dispense Pressure*	(BTU/lb)	54.3	76.5
Amount Flashed to Dry Ice	(%)	44%	51%
CO <sub>2</sub> Snow Required (yield)	(lb/day)	20,000	
Liquid CO <sub>2</sub> Supply Needed**	(lb/day)	45,450	39,210
CO <sub>2</sub> Deliveries (26 days/mo)*	(#/mo)	28	24
Liquid CO <sub>2</sub> Costs	(\$/ton)	\$75.00	\$75.00
Total CO <sub>2</sub> Product Costs	(\$/mo)	\$44,314	\$38,230
<i>Subtotal Savings w/ ChillZilla</i>	<i>(\$/mo)</i>		<i>\$6,084</i>
<b>Operating Costs</b>			
Electrical Rate	(\$/kWh)	\$0.10	
Chiller & Electric PB size	(kW)	12	35
Electrical Operating Costs***	(\$/mo)	\$250	\$1,206
Maintenance Costs	(\$/mo)	\$200	\$328
<i>Total Net Savings w/ ChillZilla</i>	<i>(\$/mo)</i>		<i>\$5,000</i>
<i>Annual Net Savings w/ ChillZilla</i>	<i>(\$/yr)</i>		<i>\$60,000</i>

\* Reference Only

\*\* One typical trailer load of 20 tons at 250 psig at a usage rate of not less than 16 hrs/day continuous for peak efficiency.

\*\*\* 26 days/mo @ 16 hrs/day. PB @ 50% duty cycle.

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