

## Material Safty Data Sheet

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### 8克壓縮二氧化碳充填鋼瓶 8 g compressed gas Carbon Dioxide (CO2) filled charger

#### 技術資料( TECHNICAL DATA )

化學文摘社登記號碼( CAS number ): 124-38-9

外觀表面( External surface ): 金色( Color-Gold )

密封方式( Sealing method ): 焊接( Welding )

鋼瓶材料( Material of body ): 深抽引鋼(special deep drawing steel)

#### 公制單位( METRIC UNITS )

#### 英制單位( US / IMPERIAL UNITS )

總長( Overall Length (approx) ):	65.8 mm	2.59 in
瓶身外徑( Body Diameter ):	18.2 mm	0.717 in
頸部外徑( Neck Diameter ):	8.5 mm	0.335 in
內容積( Internal Volume (approx) ):	10.2 ml	0.62 in <sup>3</sup>
CO2淨重( Net weight of CO2 (approx) ):	8 g	0.28 oz
空瓶重量( Tare wt. of charger (approx) ):	21 g	0.74 oz
總重( Gross wt. of charger (approx) ):	29g	1.02 oz
爆破壓( Bursting pressure ):	>500 bar	>7250 lbf/in <sup>2</sup>
壓力/溫度 在充填密度為0.78kg/liter的 狀況下( Pressure / Temperature Characteristics at filling density of 0.78 kg/liter ):	52 bar at 20 °C	750 lbf/in <sup>2</sup> at 68 °F
	185 bar at 50 °C	2680 lbf/in <sup>2</sup> at 122 °F
	290 bar at 70 °C	4200 lbf/in <sup>2</sup> at 158 °F
	425 bar at 100 °C	6160 lbf/in <sup>2</sup> at 212 °F
	470 bar at 110 °C	6815 lbf/in <sup>2</sup> at 230 °F

#### 二氧化碳( CARBON DIOXIDE ):

氣體供應商為元翎精密工業股份有限公司，63247台灣雲林縣虎尾鎮科虎三路18號( Gas supplied in accordance with Mosa Industrial Corp. 18, Kehu 3Rd. Huwei, Yunlin 63247, Taiwan spec. E290 (99% CO2) )

1 atm下的氣體壓力 ( Gas density at 1 atm ):	1.836 kg/m <sup>3</sup> at 20°C	0.115 lb/ft <sup>3</sup> at 68° F
比重( Relative density (air=1) ):	1.53 at 20°C	1.53 at 68° F
臨界溫度( Critical Temperature ):	36.5° C	98° F
分子重量( Molecular weight ):	44	
特徵( Appearance ):	氣態( vapor )	無色( colorless )
	液態( liquid )	透明( clear )
	固態( solid )	無色針狀結晶( colorless acicular crystals )

## 二氧化碳( CARBON DIOXIDE ) :

毒性( Odor ):	無毒( odorless )
閃火點( Fire Hazard ):	不可燃( non-flammable )
急毒性( Toxicity ):	無毒性，假如在連續工作的情況下吸入CO2的濃度最高達0.01% v/v會產生麻醉效果。( non-toxic, anaesthetic effect if inhaled recommended maximum 0.01% v/v for continuous working conditions )
暴露限制(Exposure Limits):	八小時日時量平均容許濃度/短時間時量平均容許濃度/最高容許濃度：TWA=50ppm；生物指標：LC50:160mg/m <sup>3</sup> /6H(老鼠) (The recommended airborne expsoure limit TWA = 5000 ppm molar averaged over an 8-hour workshift. LC50 =2.80-9.16 mg/l/96H (with mouse)).
非煙霧劑( Non aerosol )	

## 注意事項( CAUTION ):

使用小鋼瓶請參照使用說明書的指示操作。  
 ( Use chargers and dispensers only in accordance with instructions. )  
 請務加熱.使用時最高環境溫度請勿超過50°C (122°F)  
 ( Do not heat. Maximum environmental temperature in use not to exceed 50°C (122°F). )  
 請勿使用於其他不相關用途。  
 ( Do not use for any other purpose. )  
 請勿吸食. 濫用會危害您的健康。  
 ( Do not inhale. Misuse can be physically harmful and dangerous to your health. )

## 搬運及儲存( HANDLING AND STORAGE ):

保持低溫及乾燥，並遠離陽光直射及熱源。( Keep cool and dry, keep away from direct sunlight and heat. )  
 不可丟棄未使用之小鋼瓶。不要使用蠻力開啟。( Never dispose of full chargers. Never force open. )  
 遠離小孩及未成年人( Keep out of reach of children and minors. )  
 可回收鋼( Recyclable steel )  
 儲存溫度限制( Storage temperature lirn 50°C 122°F

## 運送( TRANSPORTATION ):

無危險性( Non hazardous )  
 危險等級(Class) 2.2  
 聯合國編號( UN No. ) UN1013  
 特別條款191( Special Provision 191 )  
 標示( Title ): 小型氣體容器( Receptacles, small, containing gas (gas cartridges))  
 小型容器，僅裝有無毒性成份且容量不超過50 毫升的容器，不受IMDGC規章限制( Receptacles with capacity not exceeding 50 ml containing only non-toxic constituents, are not subject to provisions of IMDGC )

## 包裝( PACKAGING ):

大尺寸( Large case ):	鋼瓶24入裝25盒( 25 boxes of 24 charger	每箱共600支鋼瓶 ( 600 total chargers per case )
	鋼瓶10入裝36盒(36 boxes of 10 charger	每箱共360支鋼瓶 ( 360 total chargers per case )
小尺寸( Small case ):	鋼瓶10入裝40盒(40 boxes of 10 charger	每箱共400支鋼瓶 ( 400 total chargers per case )