




## 1. Chemicals and company 化學品與廠商資料

Chemicals: solvent 2B/2BI 化學品名稱:慢乾溶劑 2B/2BI
Other name 其他名稱: ---
Recommended use and restrictions on the use: Industrial uses 建議用途及限制使用: 限工業用途使用
Manufacturer, importer or supplier name , Addresses, Phone : TAI YUANG INDUSTRIES CO., LTD. (THREE KINGS PAINT) 1400,CHUNG SHEN RD, SHEN KANG TAICHUNG TAIWAN.TEL: 04-25622009 製造者、輸入者或供應者名稱、地址及電話: 太原實業股份有限公司 / 台中神岡中山路 1400 號 / 04-25622009
Emergency Phone / Fax : TEL:119 or 04-25622009 FAX:04-25620931 緊急聯絡電話/傳真電話: 119 or 04-25622009 / 04-25620931

## 2. Hazard identification data 危害辨識資料

<p>Chemicals Hazard classification of goods 化學品危害分類:</p> <p>Flammable liquid category 3 , Inhalation of hazardous substances category 2 , Corrosion / materials to stimulate the skin category 3, Serious injury / substance irritates the eyes category 2A, The subject of a specific organ system toxicity of the material - repeated exposure category 2, Specific target organ toxicity - single exposure category 3, Acute toxicity quality category 4(skin) 易燃液體第 3 級, 吸入性危害物質第 2 級, 腐蝕/刺激皮膚物質第 3 級, 嚴重損傷/刺激眼睛物質第 2A 級, 特定標的器官系統毒性物質-重複暴露第 2 級 特定標的器官系統毒性物質-單一暴露第 3 級, 急毒性質第 4 級(皮膚)</p> <p>Labeled content 標示內容</p> <div style="text-align: center;">    </div> <p>Warnings: dangerous 警示語: 警告</p> <p>Hazard warning: 危害警告訊息</p> <p>H226 : Flammable liquid and vapor H305 May be harmful if swallowed and enters airways H316: Causes mild skin irritation H319 Causes serious eye irritation H373: May cause damage to organs through prolonged or repeated exposure H335: May cause respiratory H336 May cause drowsiness or dizziness H312: Harmful in contact with skin H226 : 易燃液體和蒸氣 H305 : 吞咽並進入呼吸道可能有害 H316 : 引起輕度皮膚刺激 H319 : 造成嚴重的眼睛刺激 H373 : 長期或反覆接觸會對器官造成傷害 H335 : 可能引起呼吸道刺激 H336 : 可能引起嗜睡或頭暈 H312 : 皮膚接觸有害</p> <p>Hazard prevention measures: 危害防範措施</p> <p>General:</p> <p>P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children.</p> <p>一般:</p> <p>P101 : 如需醫囑, 請將產品容器或標籤 P102 : 放在兒童伸手不及之處。</p> <p>Prevention</p>
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P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233: Keep container tightly closed.  
P240: Ground/bond container and receiving equipment.  
P241: Use explosion-proof electrical/ventilating/lighting/equipment.  
P242: Use only non-sparking tools.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P260: Do not breathe dust/fumes/gas/mist/vapours/spray.  
P264: Wash thoroughly after handling.  
P261: Avoid breathing.  
P271: Use only outdoors or in a well-ventilated area.

#### 預防:

P210 遠離火源，例如熱源/火花/明火－嚴禁抽菸  
P233：保持容器密閉。  
P240：容器和接收設備接地/等勢聯接。  
P241 使用防爆的電氣/通風/照明/設備  
P242 只能使用不產生火花的工具  
P280:著用防護手套  
P260: 不要吸入粉塵/煙/氣體/煙霧/蒸氣/噴霧。  
P264：作業後徹底清洗  
P261：避免吸入粉塵/煙/氣體/煙霧/蒸氣/噴霧。  
P271：只能在室外或通風良好處使用。

#### Response

P301+312: IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.  
P301+310: IF SWALLOWED: Immediately call a POISON  
P331: Do NOT induce vomiting.  
P302+P352: IF ON SKIN: Wash with plenty of water  
P303+P361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.  
P337+313: If eye irritation persists get medical advice/attention.  
P312: Call a POISON CENTER/ doctor/.../if you feel unwell.  
P314: Get medical advice/attention if you feel unwell.  
P321: Specific treatment (see Supplementary first aid instructions on this label).  
P332+P313: If skin irritation occurs: Get medical advice/attention.  
P362+P364: Take off contaminated clothing and wash it before reuse.  
P370+P378: In case of fire: Use dry powder fire extinguisher to extinguish.  
P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

#### 回應

P301+310: 如誤吞咽：立即呼叫解毒中心/醫生  
P331:不得誘導嘔吐。  
P302+352: 如皮膚沾染：用大量水清洗  
P303+361+353: 如皮膚(或頭髮)沾染：立即脫掉所有沾染的衣服，用水清洗皮膚/淋浴。  
P305+351+338: 如進入眼睛：用水小心沖洗幾分鐘。如戴隱形眼鏡並可方便地取出，取出隱形眼鏡再繼續沖洗。  
P337+313: 如仍覺眼刺激：求醫/就診。  
P312: 如感覺不適，呼叫解毒中心/醫生  
P314: 如感覺不適，須求醫/就診。  
P321: 具體治療（見本標籤上的補充急救說明）。  
P332 + P313 如發生皮膚刺激，立即求醫  
P362+P364 脫掉沾染的衣服，清洗後方可重新使用  
P370+P378: 火災時：使用乾粉滅火器滅火。  
P304+340: 如誤吸入：將傷者轉移到空氣新鮮處，使其保持呼吸舒適的姿勢。

#### Store

P403+235: Store in a well ventilated place. Keep cool.  
P403+233: Store in a well ventilated place. Keep container tightly closed.  
P405: Store locked up.

#### 儲存

P403+235：存放在通風良好的地方，保持低溫。  
P403+233：存放在通風良好的地方，保持容器密閉。  
P405：存放處須加鎖。

Disposal P501: Dispose of contents/container to accordance with local/regional/national/international regulation 處置 P501 內容物之廢棄/容器(按照地方/區域/國家/國際法規)
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3、Composition / Information on Ingredients (Mixing)

Chemical Character：		
Hazardous ingredient name	Concentration / Percentage	CAS no.
Propylene Glycol Monomethylether Acetate 丙二醇甲醚乙酸酯	5~10	108-65-6
Isophorone 異佛爾酮	90~95	78-59-1

4、First Aid Measures 急救措施:

Emergency and First Aid Procedures <ul style="list-style-type: none"> <li>• Inhalation：Remove the patient to fresh air or send to hospital.</li> <li>• Skin Contact：Remove clothing. Wash with water and soap very quickly</li> <li>• Eye Contact：Irrigate with plenty of water and send to hospital</li> <li>• Ingestion：Send to hospital</li> </ul> 不同暴露途徑之急救方法 <ul style="list-style-type: none"> <li>• 吸入：將患者移至空氣流通處，若狀況嚴重立即就醫。</li> <li>• 皮膚接觸：移開衣物，以肥皂、水清將接觸部位洗淨。</li> <li>• 眼睛接觸：以大量清水沖洗，立即送醫。</li> <li>• 食入：立即就醫。</li> </ul>
Major Disease and Harm Effect：headache, dizziness, drowsiness, irritation. 最重要症狀及危害效應：頭痛、暈眩、睏倦、刺激感
First-Aid Personal Protection: None 對急救人員之防護：無
Prompt to Doctor：Upon the symptom. 對醫師之提示：依據症候治療

5、Fire Fighting Measure 滅火措施:

Suitable Extinguishing Media: CO2, Dry chemical powder, foam. 適用滅火劑：二氧化碳、化學乾粉、泡沫。
Special Exposure Hazards: Burning produces irritant fumes. 滅火時可能遭遇之特殊危害：燃燒產生刺激煙霧。
Special Extinguishing Procedure: Use water to cool fire-exposed containers and protect the other material. 特殊滅火程序：噴水可冷卻容器，保護暴露於火場之物質
Special Protection Equipment: Firemen have to wear breathing apparatus and protective clothing & gloves. 消防人員之特殊防護設備：消防人員必須戴空氣呼吸器、防護衣及手套。

6、Accidental Release Measures 洩漏處理方法

Personal Protection: Keep away from the area before cleaning the pollution area. 個人應注意事項：在污染區尚未完全清理乾淨前，限制人員進入該區。
Environmental Protection: Do not let product enter drains. 環境注意事項：避免外洩物進入下水道。
Methods for Cleaning Up: Cover spill with inert absorbent material (sand). Clean contaminated surface thoroughly. 清理方法：用泥沙或類似穩定不可燃的物質吸附，徹底清洗。

7、Handling and Storage 安全處置與儲存方法

Handling: No smoking in the working area. The working place avoid in a high temperature closed room. 處置：工作場所禁止抽煙，工作場所避免高溫，保持良好通風。
Storage: Keep container away from heat fire and good ventilation. 儲存：容器置放於通風良好處，遠離熱與火源

8、Exposure Control / Personal Protection 暴露預防措施

Engineering control: Local exhaust or overall ventilation equipment. 工程控制：局部排氣裝置或整體換氣裝置					
Control Factor 控制參數：					
	TWA	/	STEL	/	CEILING / Biotic Index
	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 / 生物指標
Isophorone 異佛爾酮	5 ppm	/	10 ppm	/	--- / ---
PMA 丙二醇甲醚乙酸酯	---	/	---	/	---

Personal Protection Equipment : • Respiratory Protection: Wear a mask. • Hand Protection : Glove resistant to chemical. • Eye Protection : Wear goggles. • Skin & Body Protection: Protective clothing or lab coats must be worn
個人防護設備： • 呼吸防護：戴口罩 • 手部防護：戴抗化學品手套。 • 眼睛防護：戴護目鏡。 • 皮膚及身體防護：穿戴防護衣或實驗衣。
Hygiene Procedures: Do not eat on work, wash hands after work. 衛生措施：工作場所嚴禁飲食，處理後徹底洗手。

9、Physical and Chemical Properties / Characteristics 物理及化學性質

Appearance(Form & Color): transparent liquid 外觀(物質狀態、顏色)：透明液狀	Odor: with ketone odor 氣味：酮類氣味
Olfactory Threshold 嗅覺閾值: Isophorone 異佛爾酮 0.19 ppm PMA 丙二醇甲醚乙酸酯 ---	Melting point: none 熔點: ---
pH value : No data pH 值：無資料	Boiling Point / Boiling Range: 146~215°C 沸點 / 沸點範圍 :146~215°C
Decomposition Temperature : No data 分解溫度：無資料	Flash Point 閃火點： Test methods (open cup or closed cup): Close Cup 測試方法（開杯或閉杯）：閉杯 Isophorone 異佛爾酮 84 °C PMA 丙二醇甲醚乙酸酯 42°C
Spontaneous Temperature : >350°C 自燃溫度：>350°C	Exposure Limits 爆炸界限： ( LEL ) ~ ( UEL ) Isophorone 異佛爾酮 0.8~3.8% PMA 乙酸丙二醇單甲基醚酯 1.5 ~ 7 %
Vapor Pressure 蒸氣壓： Isophorone 異佛爾酮 0.3 mmHg PMA 丙二醇甲醚乙酸酯 3.8 mmHg：	Vapor Density : --- 蒸氣密度： ---
Specific Gravity 密度：0.92 g/cm <sup>3</sup>	Solubility in Water : Insoluble 溶解度：水中不溶
Octanol / Water distribution coefficient (log Kow): 辛醇/水分配係數(log Kow) Isophorone 異佛爾酮 1.7-3.34 ppm PMA 丙二醇甲醚乙酸酯 ----	Vaporize rate: --- 揮發速率: ---

10、Stability and Reactivity 安定性及反應性

Chemical stability : Stable under normal circumstances. 安定性：正常狀況下安定。
Reactivity : Hazardous Polymerization will not occur. 反應性: 不會產生有害聚合反應
Conditions to Avoid: Sparks, static electricity 應避免之狀況：火花, 靜電。
Materials to avoid: Strong oxidizers. 應避免之物質：強氧化劑。
Hazardous Decomposition Products: Carbon Dioxide, Carbon Monoxide 危害分解物：著火時釋放出有毒蒸氣及氣體。如一氧化碳&二氧化碳

11、Toxicological Information 毒性資料

Exposure means: skin, inhalation, ingestion, eye 暴露途徑: 皮膚、吸入、食入、眼睛
Symptoms: headache, dizziness, drowsiness, vomiting, irritation. 症狀:頭痛、暈眩、困倦、嘔吐、刺激感

Acute toxicity Skin: cause mild stimulation Inhalation: will stimulate the nose and throat. Give rise to a higher concentration of headache, nausea and drowsiness. Ingestion: effects of inhaled with the same Eyes: steam will stimulate 急毒性： 皮膚：引起輕度刺激。 吸入：會刺激鼻、喉。更高濃度會引起頭痛、噁心、困倦。 食入：影響與吸入同 眼睛：蒸氣會引起刺激
Chronic toxicity or long-term toxicity: nerves, liver, skin influential. 慢毒性或長期毒性：對神經、肝、皮膚有影響。

## 12、Ecological Information 生態資料

Biological toxicity 生態毒性			
	LC50(Fish)	EC50(Aquatic invertebrates)	BCF
	LC50(魚類)	EC50(水生無脊椎動物)	BCF(生物濃縮係數)
isophorone 異佛爾酮	----	---	7
PMA 丙二醇甲醚乙酸酯	1690-5640 mg/L/96H	---	1
Degradation and persistent 持久性及降解性:			
1 Isophorone may be caused by seepage of groundwater in the soil may also be important in water savings. 異佛爾酮可能由土壤滲地下水中，亦可能在水中有重要積蓄性			
2.			
	PMA 丙二醇甲醚乙酸酯	Isophorone 異佛爾酮	
Half-life (air) 半衰期(空氣)	---	0.411-3.13 hr.	
Half-life (water surface) 半衰期(水表面)	---	168-672 hr.	
Half-life (water) 半衰期(地下水)	---	336-1344 hr.	
Half-life (soil) 半衰期(土壤)	---	168-672 hr.	
Biological savings 生物積蓄性:			
Isophorone: mainly by evaporation and removal of biological decomposition 異佛爾酮：主要通過蒸發和生物分解去除			
The soil of mobility: Released to soil or water, isophorone is mainly removed by evaporation (half-life is about 7 days in river water) and biodegradation 土壤中之流動性: 異佛爾酮釋放至土壤或水中，主要由蒸發作用(半衰期在河水中約為7天)，及生物分解而移除			
Other adverse effects 其他不良效應: ---			

## 13、Disposal considerations 廢棄處置方法

Methods of waste disposal :Observe all federal, state and local regulations when disposing of this substance. 廢棄處置方法：於政府認可之焚化爐焚化
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## 14、Transport Information 運送資料

Number of the United Nations:1263 聯合國編號：1263
Transport hazard classification: The third type of flammable liquid 運輸危害分類: 第三類易燃液體
Type of packaging: III 包裝類別: III
Marine pollution (yes / no): NO 海洋污染物(是/否): 否
And the delivery of special attention: --- 特殊運送方法及注意事項：無

## 15、Regulatory Information 法規資料

Applicable laws and regulations 適用法規: Labor safety and hygiene facilities, rules, rules of organic solvent poisoning prevention, road traffic safety rules Hazard and harmful substances, and marked general rules, the labor environment in the air to allow the concentration of harmful substances standards Industrial waste treatment and storage facilities clear standards  勞工安全衛生設施規則，有機溶劑中毒預防規則，道路交通安全規則， 危害物與有害物標示及通識規則，勞工作業環境空氣中有毒物容許濃度標準， 事業廢棄物貯存清除處理方法及設施標準
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## 16、Other Information 其他資料

Reference 參考文獻	CHEMINFO database, HSDB database	
company	Name：TAI YUANG INDUSTRIES CO.,LTD. 名稱：太原實業股份有限公司	
製表單位	Addresses/Phone：1400,CHUNG SHEN RD, SHEN KANG TAICHUNG TAIWAN. +886-4-25622009 地址/電話：台中縣神岡鄉中山路 1400 號	
Prepare by 製表人	Professional Post：manager 職稱：經理	Name (Sign)：Kelly Wu 姓名：吳慧玲
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