



NAN PAO RESINS CHEMICAL CO., LTD

Material Safety Data Sheet

I. 物品名稱與廠商資料 Identification of the substance / preparation and company

物品名稱/編號 Product Information / Number : 71KN
製造商或供應商名稱地址及電話 Information on Producer/Supplier Name、Addresses、Phone : 南寶樹脂化學工廠股份有限公司 / 台南市西港區南海里 12 號 (06) 7952801-8. NAN PAO RESINS CHEMICAL CO., LTD. / 12, Nan Hai Village, Xigang Dist., Tainan City, Taiwan, R.O.C. 886-06-7952801-8
緊急聯絡電話/傳真 Emergency Phone / Fax : (06)795-2801~8 / (06)7950079(台灣廠 Taiwan factory)
國家化學事故應急諮詢電話 National Consulting hotline for Chemical Accidents & Emergencies : 0532-83889090 ; 0532-83889191

II. 危害辨識資料 Hazard Identification

緊急信息 Information in emergency : 高度易燃 Extremely flammable.	
物品危害分類 Product hazard class : 易燃液體第 2 級、腐蝕/刺激皮膚物質第 3 級、水環境之危害物質(慢性)第 2 級、吸入性危害物質第 1 級. Flammable liquid class:2, burn/irritate skin material class:3, Hazardous to the aquatic environment (Chronic toxicity) class:2, the inbreathable damage material class:1	
標示:火焰 fire,健康危害 health hazard 刺激物質 irritate skin material 環境危害 Hazardous to the aquatic environment	
警示語: 危險 SIGNAL WORD : Danger	
危害成分: 乙酸乙酯 丁酮 丙酮	HAZARDOUS COMPONENTS : Ethyl Acetate Methyl Ethyl Ketone Acetone
危害警告訊息: WARNING FOR HAZARD : 1. 易燃液體和蒸氣 1.Flammable liquid and vapor. 2. 造成輕微皮膚刺激 2.Lightly irritation to skin 3. 造成眼睛刺激 3.Irritation to eyes. 4. 長期或重複暴露可能會對器官造成傷害 4.Hazardous organ if expose for long term. 5. 如果吞食並進入呼吸道可能致命 5.It may be death if swallow and go into the respiratory system. 6. 對水生生物有毒並具有長期持續影響 6. It has poison to aquatic animal and effect for long term.	
危害防範措施: AVOID HAZARD PROCEDURES : 1. 遠離火源—禁止吸煙 1.Keep away from flame and no smoking. 2. 操作時通風良好, 不用時容器蓋緊 2.Use in a well-ventilated area, keep container closed tightly. 3. 配戴防護口罩和手套 3.Use appropriate respirator and gloves. 4. 蓋緊容器 4.Close up the container.	
<ul style="list-style-type: none">• 眼睛接觸 Eye Contact : 如不及時清除, 會刺激眼睛, 或傷害眼膜. Irritating and may injure eye tissue if not removed promptly.• 皮膚接觸 Skin Contact : 經常或長期接觸會引起刺激或皮炎, 重複或長期接觸會引起皮膚脫脂, 導致皮膚刺激或乾燥. Frequent or prolonged contact may irritate and cause dermatitis. Repeated or prolonged contact may cause de-fatting of the skin, which may lead to skin irritation and / or dryness.• 吸入 Inhalation : 吸入過量可能會刺激呼吸道, 引起眼部刺激或嘔吐, 應注意吸入的濃度不要超過 TWA 值. Overexposure may be irritating to respiratory passages and cause other effects such as eye irritation or nausea. Care should be taken not to exceed the TWA.• 食入 Ingestion : 刺激口, 喉, 胃. 可能會引起胃部紊亂或傷害. 在吞食或嘔吐時少量液體會滲入呼吸系統, 可能會引起肺部浮腫, 支氣管肺炎. Irritating to mouth, throat and stomach. May cause gastric tract disorder and / or damage. Small amount of liquid aspirated into the respiratory system during ingestion or from vomiting, may cause bronchopneumonia of pulmonary edema.	



III. 成分辨識資料 Composition / Information on Ingredients

混合物 Mixing :

化學性質 Chemical Characteristics :			
危害物質成分之中英文名稱 Hazardous Components Name	化學文摘社登記號碼 CAS No.	濃度或濃度範圍 Concentration / Percentage (%)	NFPA 危害等級 NFPA Hazard Rating
丁酮 Methyl Ethyl Ketone	78-93-3	64-70	H: 1 / F: 3 / R: 0
PU 樹脂 PU Resin	9009-54-5	16-20	N/A
丙酮 Acetone	67-64-1	5-10	H: 1 / F: 3 / R: 0
乙酸乙酯 Ethyl Acetate	141-78-6	5-10	H: 1 / F: 3 / R: 0
其他 Others	N/A	1 - 3	N/A

* H: 健康 Health F: 火災 Fire R: 反應 Reactivity

IV. 急救措施 First Aid Measures

- 吸入 **Inhalation** : 將患者移至空氣清新處。如果呼吸困難, 立即供氧; 如果呼吸停止, 立即施予人工呼吸並送醫治療。 Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.
- 皮膚接觸 **Skin Contact** : 以大量清水或肥皂水洗清。脫掉嚴重污染的衣服, 鞋。在再穿之前洗淨, 如果刺激持續, 請就醫。 Flush with large amount of water; Use soap if available. Remove grossly contaminated clothing, including shoes and launder before re-use. Discard shoes. If irritation persists, get medical attention.
- 眼睛接觸 **Eye Contact** : 立即翻起上下眼瞼以大量水沖洗 15 分鐘以上, 並及時送醫治療。 Immediately flush eyes with large amount of water for at least 15 minutes, lifting upper and lower lids. Get prompt medical attention.
- 食入 **Ingestion** : 避免催吐, 如患者清醒, 給予牛奶或水以稀釋胃液, 注意保暖, 保持休息, 並送醫治療。 Do not induce vomiting. If individual is conscious, give milk or water to dilute stomach contents. Keep warm and quiet. Get prompt medical attention.

最重要症狀及危害效應 **The most important symptoms and hazardous effects** : 毒性極低, 主要是抑制中樞神經。 Lower poison, and it mainly effects on central nervous system.

對急救人員之防護 **The protection of first-aiders** : 應穿著 C 級防護裝備在安全區實施急救。 The person who should wear C class protect suit and carry out first-aid in safety area.

對醫師之提示 **Note to physician**: 若是吸入, 請考慮輸氧, 若是食入, 應考慮胃的傷害, 避免碳酸鹽或重碳酸鹽。 For inhalation, consider oxygen. For ingestion, consider gastric ravage. Avoid carbonates, bicarbonates.

V. 滅火措施 Fire Fighting Measure

閃點 **Flash Point** : -5 °C (閉杯 Closed Cup)

自燃點 **Auto-ignition** : 408 °C

燃燒上下限 **Low / Upper Flammable limits** : 1.8 – 12.8 %

適用滅火劑 **Extinguishing Media** : 使用水霧, 泡沫, 化學乾粉或二氧化碳滅火劑。 Use water spray, foam, dry chemical or carbon dioxide.

滅火時可能遭遇之危害 **Specific hazards may be encountered during fire-fighting**: 1. 氣體比空氣重, 會傳播至遠處, 遇火源可能造成回火。 2. 火場中可能產生毒性氣體。 3. 液體會浮於水面上, 反而將火勢蔓延開。 4. 火場中容器遇熱可能爆炸。 1. The steam is heavy than air, it will spread far away. It might be temper when somewhere has fire. 2. It might be produce poison air in the fire scene. 3. The liquid will float on the water, and it will help fire spread easily. 4. The container might be exploded when it's in the fire scene.

滅火程式 **Specific fire-fighting methods**: 1. 不宜用水霧滅火, 但可噴水霧吸熱冷卻容器及保護暴露於火場的物質。 2. 如外洩物未著火, 可噴水霧驅散蒸氣、保護止洩人員並將外洩物沖離。 3. 撤退並自安全距離或受保護的地點滅火。 4. 位於上風處以避免危險的蒸氣和有毒的分解物。 5. 滅火前先阻止溢漏, 如果不能阻止溢漏且周圍無任何危險, 讓火燒完, 若沒有阻止溢漏而先行滅火, 蒸氣會與空氣形成爆炸性混合物而再引燃。 6. 隔離未著火物質且保護人員。 7. 安全情況下將容器搬離火場。 8. 以水霧冷卻火場的貯槽或容器。 9. 以水霧滅火可能無效, 除非消防人員受過各種易燃液體之滅火訓練。 10. 如果溢漏未引燃, 噴水霧以分散蒸氣並保護試圖止漏的人員。 11. 以水柱滅火無效。 12. 大區域之大型火災, 使用無人操作之水霧控制架或自動搖擺消防水瞄。 13. 儘可能



撤離火場並允許火燒完。14. 遠離貯槽。15. 貯槽安全閥已響起或因著火而變色時立即撤離。 1. The fire is not suitable to use water, but it can use water to cool down the containers and protect the materials in the fire scene. 2. If the leak material isn't on fire, it can use the water to cool down, and wash away the leak material to protect the people. 3. Moving to the safety area to put out a fire. 4. Moving to windward place to avoid the damage steam and poison material. 5. To stop leak before putting out a fire. Let the fire burn down, if it can't stop leaking and there are no damage things surrounding. Because the steam will mix the air to be the explode material and burn again. 6. To close off the material without fire and protect the staffs. 7. To move the container out the fire scene in safe situation. 8. Using the water to cool down the tank or container in the fire scene. 9. It might be ineffective to use water to put out the fire, only when the fireguards who had trained to put out the fire in every liquid. 10. If the leak material without fire, immediately using water to scatter the steam and protecting the people who try to stop leak. 11. It's ineffectively to use water to put out the fire. 12. In big area fire, using self-motion sprinkle water spray machine. 13. As far as moving out the fire scene and let the fire burn down. 14. Leaving the tank away. 15. To leave immediately when the tank's safety gear ring or change color by fire.

消防人員之特殊防護裝備 **Special equipment for the protection of firefighters** : 消防人員必須配戴空氣呼吸器、防護手套、消防衣 The firefighters must wear the oxygen mask, protective gloves, and protective suit.

危害分解物 **Hazardous Decomposition**: 熱分解時會產生一氧化碳，未知的有機化合物。 Thermal decomposition could produce carbon monoxide, unidentified organic compounds.

VI. 洩漏處理方法 Accidental Release Measures

洩漏處理程式 **Spill and leak procedure**: 熄滅火源，若無危險，盡量堵住外泄物。若少量洩漏，用沙或吸附性物質吸乾;若洩露量大，先築堤將外泄物圍堵，等待處理。危險場所不能有煙火，並隔離閑人。 Shut off ignition sources. Stop leak if you can do it without risk. For small liquid spills, take up with sand or other absorbent material. For larger spills, dike far ahead of spill for later disposal. No smoking, flares of flames in hazard area. Keep unnecessary people away.

個人應注意事項 **Personal precautions** : 1.限制人員進入，直至外溢區完全清乾淨為止。2.確定是由受過訓之人員負責清理之工作。3.穿戴適當的個人防護裝備。 1. Limit the staffs entry until the leak area complete clean. 2. Ensuring that the people who bear the clean job are trained. 3. To wear the personal equipment for protection.

環境保護 **Environmental protection** : 防止擴散，避免流入下水道。 Prevent diffusion, Prevent entry into the sewage system.

為了安全和環境的預防，請參考完整的MSDS資料。 For safety and environmental precautions please review entire MATERIAL SAFETY DATA SHEET, for necessary information.

VII. 安全處置與儲存方法 Handling and Storage

處置 **Handling** : 保持工作場所通風良好。 Ensure efficient exhaust ventilation in the working area.

儲存 **Storage** : 密封儲存於 5--40°C。 Keep container tightly closed and store between 5°C and 40°C.

VIII. 暴露預防措施 Exposure Control / Personal Protection

暴露界限 Exposure limits				
成分 Component	八小時日時量平均容許濃度 TWA	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	生物指標 BEIs
丁酮 Methyl Ethyl Ketone	200 ppm	590 mg/m ³	---	下班後尿中 MEK 為 2mg/L
乙酸乙酯 Ethyl Acetate	400 ppm	1440 mg/m ³	---	---
丙酮 Acetone	750 ppm	1780 mg/m ³	---	---

個人防護設備 **Personal Protection Equipment** :
• 通風防護 **Ventilation protection** : 保持工作場所通風良好。 Ensure efficient exhaust ventilation in the working area.
• 呼吸防護 **Respirator protection**: 避免過長或重複呼吸其蒸氣或煙霧，若超過職業暴露限制，請佩戴 NIOSH 確認的呼吸器。 Avoid prolonged or repeated breathing of vapor or mists. If exposure may exceed occupational exposure limits, use a NIOSH approved respirator to prevent overexposure.



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- 眼部防護 **Eye protection** : 戴化學護目鏡. Wear chemical goggles.
 - 手部防護 **Hand protection** : 建議戴防滲橡膠手套. Impervious rubber gloves are recommended.
 - 衣服防護 **Clothing protection** : 使用符合工業衛生標準的衣服. Standard industrial hygiene procedures should be practiced.
- 衛生措施 **Hygiene Procedures** : 遵循一般預防措施, 污染的衣物立即更換, 工作後洗手. Observe the common precautionary measure; contaminated clothes must be changed immediately. Wash hands after work is completed.

IX. 物理及化學性質 Physical and Chemical Properties / Characteristics

外觀 Appearance : 無色至淡黃色液體 Colorless or light yellow liquid
沸點/沸點範圍 Boiling Point / Boiling Range : 70 – 80 °C
氣味 Odor : 似酮味. Like ketone odor
比重 Specific Gravity : 0.75 - 0.85 (Water=1)
溶解度 Solubility in Water : 不溶. Insoluble.
閃點 Flash Point : -5 °C (閉杯 Closed Cup)
自燃點 Auto-ignition : 408 °C
燃燒上下限 Low / Upper Flammable limits : 1.8 – 12.8 %
pH value : --
嗅覺閾值 Odor threshold : — ppm(偵測)、— ppm(覺察)
易燃性(固體、氣體) Flammability(solid, gas) : —
分解溫度 Decomposition temperature : —
蒸氣壓 Vapor pressure : —
蒸氣密度 Vapor density : — (空氣=1)
辛醇/水分配係數 Partition coefficient(n-octanol/water, log Kow) : —
揮發速率 Evaporation rate : — (乙酸丁酯=1)

X. 安定性及反應性 Stability and Reactivity

安定性 Stability : 安定. Stable.
特殊狀況可能之危害反應 Possible hazardous reactions under specific conditions : 1. 靜電. 2. 火花. 3. 明火. 4. 其他引火源. 5. 強氧化劑(如過氧化物, 硝酸鹽或過氯酸鹽): 會增高起火及爆炸的危險性. 1. Static electricity. 2. Spark. 3. Fire. 4. Other flammable material. 5. Strong oxidant (Ex: peroxide, nitrate, perchlorate can increase the opportunity of fire and explode.
應避免之狀況 Conditions to Avoid : 遠離火源. Keep away from flame.
應避免之物質 Incompatibility : 強鹼和強酸. Strong alkalis and strong acids.
危害分解物 Hazardous Decomposition Products : 熱分解時會產生可燃有毒的氣體. Formation of combustible and noxious fumes during thermal decomposition.

XI. 毒性資料 Toxicological Information

• 丁酮 Methyl Ethyl Ketone : 毒性資料 Toxicity data : LC50 inhalation-rat 11300ppm/4H ; 11300 ppm /4H(大鼠, 吸入) LD50 oral-rat 2740 mg/kg ; 2740 mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system. (中樞神經系統)
• 乙酸乙酯 Ethyl Acetate : 毒性資料 Toxicity data : LC50 inhalation-rat 16000 ppm/6H ; 16000 ppm /6H(大鼠, 吸入) LD50 oral-rat 5600 mg/kg 5600mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system . (中樞神經系統)
• 丙酮 Acetone : 毒性資料 Toxicity data : LC50 inhalation-rat 50100 mg/m ³ /6H ; 50100 ppm/6H(大鼠, 吸入) LD50 oral-rat 5800 mg/kg 5800 mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system (中樞神經系統)
暴露途徑 Routes of exposure: 吸入、皮膚接觸、眼睛接觸、食入. Breath, skin contact, eye contact, eats.
症狀 Symptoms: 刺激感、噁心、嘔吐、頭痛. Stimulate. Nausea. Puke. Headache.
急毒性 Acute toxicity:



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皮膚:1.直接接觸到液體可能導致輕度皮膚刺激
 吸入:1.毒性極低，主要是抑制中樞神經，會導致頭昏眼花及噁心。2.高濃度可導致意識喪失。3.蒸氣可會刺激鼻子和喉嚨。
 食入:1.會導致喉嚨痛、噁心及腹瀉。2.嘔吐時可能會吸入肺部造成嚴重肺刺激、損壞肺組織或死亡。
 眼睛:1.300ppm 蒸氣會刺激眼睛 2.液體濺到眼睛也會刺激
 Skin: Directly contact the liquid would lead to the imponderability skin allergy.
 Breath: 1.lower poison and it mainly effects on central nervous system, will lead to dizziness and nausea. 2. High concentration steam will lead to lose the mind. 3. The steam will stimulate nose and throat.
 Eat: 1. It will lead to throat pain, nausea, and diarrhea. 2. When people nausea, it might be hurt the lung or death
 Eye: 1.300ppm steam will stimulate eyes. 2. The liquid also will stimulate eyes.

慢性或長期毒性 Chronic toxicity or long term toxicity:1.會溶解皮膚油脂，長期接觸可能導致皮膚炎
 It will dissolve the skin's oil; it leads to dermatitis in long term.

XII. 環境資料 Ecological Information

- 丁酮 **Methyl Ethyl Ketone**
 生態毒性資料 **Ecotoxicity Data:**
LC50 (魚類 Fishary toxicity) : 1690-5640mg/96H (1690-5640mg/96 小時)
EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : -
生物濃縮係數 (BCF) : 1
- 乙酸乙酯 **Ethyl Acetate**
 生態毒性資料 **Ecotoxicity Data:**
LC50 (魚類 Fishary toxicity) : -
EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : -
生物濃縮係數 (BCF) : -
- 丙酮 **Acetone :**
 生態毒性資料 **Ecotoxicity Data:**
LC50 (魚類) : 8300-40000mg/96H
EC50 (水生無脊椎動物) : 10mg/48H
生物濃縮係數 (BCF) : 0.69

環境總結 **Environmental Summary:** Harmful to aquatic life. (有害於水生生活)

持久性及降解性 Persistence and degradability :
 1.具有高度的抗生物分解性。2.當釋放至水中，預期會揮發及滲入地下。3.當釋放至大氣中，預期會與氫氧自由基反應，半衰期約 52 小時。1. High bioresistance. 2. It expects to evaporate or infiltrate in the ground when put in the water. 3. It expects to reaction with hydrogen when put in the air. And its half-life is 52 hours

生物蓄積性 Bioaccumulative potential : 因會很迅速代謝及排出，故不太可能蓄積。It will not accumulate because it's easy to drain out.

土壤中之流動性 Mobility in soil : 當釋放至土壤中，預期會揮發及滲入地下。It expects to evaporate or infiltrate in the ground when put in the soil.

其他不良反應 Other adverse effects : -

XIII. 廢棄處置方法 Disposal Information

廢棄處置方法 **Waste disposal methods :** 依聯邦，國家或地方法規處理。Waste disposal should be in accordance with existing federal, state and local environmental regulations.

空容器警告 **Empty containers warnings :** 空容器可能含有化學殘留物，即使已倒空，也要參照物質安全資料表 & 標籤處理。Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

XIV. 運輸資料 Transport Information

海運名稱 Dot Shipping Name	聯合國運輸編號 UN Number	危害等級 Dot Hazard Class	包裝分類 PCK GRP
易燃液體 Inflammable Liquid	1993	3	II

XV. 法規資料 Regulation Information



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- TSCA: 所有成分都在 TSCA 詳細目錄中. All components are on the TSCA inventory.
- 歐共體危險, 安全短語 EC Risk and Safety Phrases:
 - R11 : 高度易燃. Highly flammable.
 - R36 : 刺激眼睛. Irritating to eyes.
 - R66 : 重複的接觸會引起皮膚乾燥或裂口. Repeated exposure may cause skin dryness or cracking.
 - R67 : 蒸汽可能引起睡眠或頭暈. Vapours may cause drowsiness and dizziness.
 - S09 : 放置於通風良好的地方. Keep container in a well ventilated place.
 - S16 : 遠離火源, 嚴禁吸煙. Keep away from sources of ignition-No smoking.
 - S25 : 避免眼睛與皮膚接觸. Avoid contact with skin and eyes.
 - S33 : 防止靜電. Take precautionary measures against static discharges.
 - S43 : 在發生火災時用沙, 土, 化學粉末或 醇類泡沫滅火劑滅火. In case of fire use sand, earth, chemical powder or alcohol type foam.

適用法規 Applicable regulations :

- 1.勞工安全衛生設施規則 2.危險物與有害物標示及通識規則 3.勞工作業環境空氣中有害物容許濃度標準
 4.道路交通安全規則 5.事業廢棄物貯存清除處理方法及設施標準 6.毒性化學物質管理法 7.公共危險物品及可燃性高壓氣體設置標準暨安全管理辦法
 1. The Essentials of Labors Safety and Hygiene 2. The danger and passes with the harmful indication knows the rule 3. In laborer work ambient air harmful admissible concentration standard 4. Road traffic safety precaution 5. Enterprise rejects storing elimination processing method and facility standard 6. Toxic chemical substance control law 7. Public dangerous goods and ignitable compressed gas establishment standard and safety control means

XVI. 其他資料 Other Information

資料來源 Sources of information : 台灣工業安全局 Taiwan industrial safety corporation. 美國 MDL 信息系統 U.S. MDL information systems, Inc.			
本資料只適用於產品本身, 不適用於和其他混合使用. 根據我們的研究和可靠的資料, 我們認為它是精確的, 但不保證它的精確性. The information given and the recommendations made herein apply to our products alone and not combined with other products. Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made.			
製表單位 Compile Section	名稱 Name : 第一研發課 First section of R & D department.		
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Toluene Free PU Cement NP-71KN

Product No.產品編號：	NP-71KN	Compile editor 製表人：	Davie Zhu
Document No.文件編號：	The second edition 第二版	Compile date 製表日期：	2015/01/01

APPLICATION & CHARACTERISTIC 用途與特性：

1. High performance of weathering resistance, anti-ageing and heat-resistance.
 2. Non-yellowing under U.V. light irradiation or sun shine.
 3. High final bonding strength.
 4. It is widely applied to all materials of shoe-making industry. Such as PHYLON, EVA, Synthetic leather, PVC, TPR, Leather, PU FOAM and RB etc.
- ◇ 耐候性, 耐老化性, 耐熱性佳.
 - ◇ 在 U.V 光或陽光照射下,耐黃變性極佳.
 - ◇ 後期拉力高.
 - ◇ 廣泛應用鞋用各種材質之接著,如模壓 EVA,EVA,人造皮,PVC,TPR, 真皮, PU 發泡和橡膠等等.

PHYSICAL PROPERTY 物性：

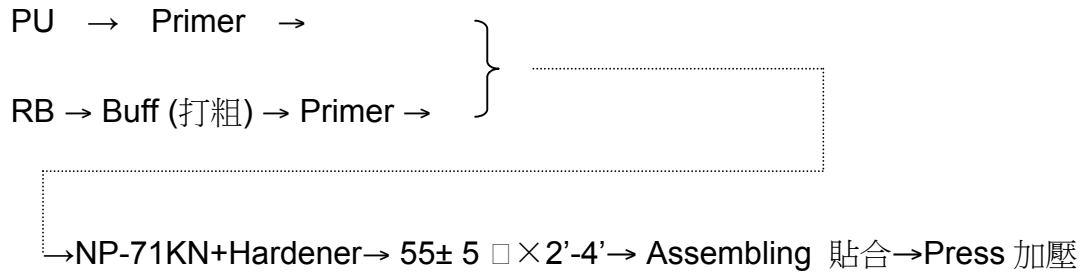
1. Appearance 外觀：Colorless transparent liquid 無色透明液體
2. Functional Component 有效成份：PU resin PU 樹脂
3. Solid Content 固成份：15.0±3.0 %
4. Viscosity 粘度：1200-1600cps (RVT 3#/20R, 30□)
1400-1800cps (RVT 3#/20R, 25□)
1000-1700cps (DV-II S62/6RPM, 25□)
5. Shelf Life 有效期限：6 months 6 個月
6. Storage temp：儲藏溫度：5~40°C
7. For solvent components, pls refer to MSDS. 溶劑成分請參照 MSDS.

USAGE 使用方法：

1. Formulation ratio (by weight):調配比(按重量)

SBA (油性膠)	Humidity (相對濕度)	1kg	2kg	3kg	4kg	5kg
Hardener 硬化劑	□80%	40g	80g	120g	160g	200g
	>80%	50g	100g	150g	200g	250g

2. Bonding process(Reference) 操作流程:(參考)



3. Suggestion (建議):

Troditional drying Condition (傳統烘箱烘乾條件): 55±5 □ × 2'-4'

NIR oven drying Condition (紅外烘箱烘乾條件): 55±5 □ × 1'30"-3'

Ps. NIR oven drying condition is suggested to set according to the operation of different models, and special models.

不同類型的烘箱, 烘乾條件按實際操作定, 特殊型體依據鞋廠實際情況確定.

NOTICE 注意事項 :

1. Keep away from flame.
 2. Keep away from flame, store in cool, dry, well-ventilated place.
 3. Operator must wear PPE.
- ◇ 使用時請務必遠離火源, 以避免引發火警.
 - ◇ 遠離火源, 並儲存於陰涼, 乾燥, 通風之處.
 - ◇ 操作人員須配戴 PPE 防護用具.

南寶樹脂化學工廠股份有限公司
NAN PAO RESINS CHEMICAL CO., LTD.

總公司 • 台南縣西港鄉南海村12號 Tel: (06)7952801-8 Fax: (06)7950079 Head Office • 12, Nan Hai Village, Shee Kang Shiang, Tainan, Taiwan
台北辦事處 • 台北市重慶北路3段235之1號 Tel: (02)25942172 Fax: (02)25964485 Taipei Office • 235-1, Sec. 3, Chung Ching N. Rd., Taipei, Taiwan

www.nanpaoresins.com.tw



NAN PAO RESINS CHEMICAL CO., LTD

Material Safety Data Sheet

I. 物品名稱與廠商資料 Identification of the substance / preparation and company

物品名稱/編號 Product Information / Number : 1015F
製造商或供應商名稱地址及電話 Information on Producer/Supplier Name、Addresses、Phone : 南寶樹脂化學工廠股份有限公司 / 台南市西港區南海里 12 號 (06) 7952801-8. NAN PAO RESINS CHEMICAL CO., LTD. / 12, Nan Hai Village, Xigang Dist., Tainan City, Taiwan, R.O.C. 886-06-7952801-8
緊急聯絡電話/傳真 Emergency Phone / Fax : (06)795-2801~8 / (06)7950079(台灣廠 Taiwan factory)
國家化學事故應急諮詢電話 National Consulting hotline for Chemical Accidents & Emergencies : 0532-83889090 ; 0532-83889191

II. 危害辨識資料 Hazard Identification

緊急信息 Information in emergency : 高度易燃 Highly flammable.	
物品危害分類 Product hazard class : 易燃液體第 2 級、腐蝕/刺激皮膚物質第 3 級、水環境之危害物質(慢性)第 2 級、吸入性危害物質第 1 級. Flammable liquid class:2, burn/irritate skin material class:3, Hazardous to the aquatic environment (Chronic toxicity) class:2, the inbreathable damage material class:1	
標示 sign:火焰 fire,健康危害 health hazard 刺激物質 irritate material 環境危害 Hazardous to the aquatic environment	   
警示語：危險 SIGNAL WORD : Danger	
危害成分：丙酮 三氯三聚異氰酸	HAZARDOUS COMPONENTS : Acetone Trichloroisocyanuric Acid
危害警告訊息：WARNING FOR HAZARD : 1. 易燃液體和蒸氣 1.Flammable liquid and vapor. 2. 造成輕微皮膚刺激 2.Lightly irritation to skin 3. 造成眼睛刺激 3.Irritation to eyes. 4. 長期或重複暴露可能會對器官造成傷害 4.Hazardous organ if expose for long term or repeatedly. 5. 如果吞食並進入呼吸道可能致命 5.It may be death if swallow and go into the respiratory system. 6. 對水生生物有毒並具有長期持續影響 6. It has poison to aquatic animal and effect for long term.	
危害防範措施：AVOID HAZARD PROCEDURES : 1. 遠離火源—禁止吸煙 1.Keep away from flame and no smoking. 2. 操作時通風良好，不用時容器蓋緊 2.Use in a well-ventilated area , keep container closed tightly. 3. 配戴防護口罩和手套 3.Use appropriate respirator and gloves. 4. 蓋緊容器 4.Close up the container.	
<ul style="list-style-type: none">• 眼睛接觸 Eye Contact : 如不及時清除，會刺激眼睛，或傷害眼膜. Irritating and may injure eye tissue if not removed promptly.• 皮膚接觸 Skin Contact : 經常或長期接觸會引起刺激或皮炎，重複或長期接觸會引起皮膚脫脂，導致皮膚刺激或乾燥. Frequent or prolonged contact may irritate and cause dermatitis. Repeated or prolonged contact may cause de-fatting of the skin, which may lead to skin irritation and / or dryness.• 吸入 Inhalation : 吸入過量可能會刺激呼吸道，引起眼部刺激或嘔吐，應注意吸入的濃度不要超過 TWA 值. Overexposure may be irritating to respiratory passages and cause other effects such as eye irritation or nausea. Care should be taken not to exceed the TWA.• 食入 Ingestion : 刺激口，喉，胃. 可能會引起胃部紊亂或傷害. 在吞食或嘔吐時少量液體會滲入呼吸系統，可能會引起肺部浮腫，支氣管肺炎. Irritating to mouth, throat and stomach. May cause gastric tract disorder and / or damage. Small amount of liquid aspirated into the respiratory system during ingestion or from vomiting, may cause bronchopneumonia of pulmonary edema.	



III. 成分辨識資料 Composition / Information on Ingredients

混合物 Mixing :

危害物質成分之中英文名稱 Hazardous Components Name	化學文摘社登記號碼 CAS No.	濃度或濃度範圍 Concentration / Percentage (%)
丙酮 Acetone	67-64-1	97 – 98
三氯三聚異氰酸 Trichloroisocyanuric Acid	87-90-1	2 – 3

IV. 急救措施 First Aid Measures

- 吸入 **Inhalation** : 將患者移至空氣清新處。如果呼吸困難, 立即供氧; 如果呼吸停止, 立即施予人工呼吸並送醫治療。 Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.
- 皮膚接觸 **Skin Contact** : 以大量清水或肥皂水洗清。脫掉嚴重污染的衣服, 鞋。在再穿之前洗淨, 如果刺激持續, 請就醫。 Flush with large amount of water; Use soap if available. Remove grossly contaminated clothing, including shoes and launder before re-use. Discard shoes. If irritation persists, get medical attention.
- 眼睛接觸 **Eye Contact** : 立即翻起上下眼皮以大量水沖洗 15 分以上, 並及時送醫治療。 Immediately flush eyes with large amount of water for at least 15 minutes, lifting upper and lower lids. Get prompt medical .
- 食入 **Ingestion** : 避免催吐, 如患者清醒, 給予牛奶或水以稀釋胃液, 注意保暖, 保持休息, 並送醫治療。 Do not induce vomiting. If individual is conscious, give milk or water to dilute stomach contents. Keep warm and quiet. Get prompt medical attention.

最重要症狀及危害效應 **The most important symptoms and hazardous effects** : 毒性極低, 主要是抑制中樞神經 Lower poison, and it mainly effects on central nervous system.

對急救人員之防護 **The protection of first-aiders** : 應穿著 C 級防護裝備在安全區實施急救 The person who should wear C class protect suit and carry out first-aid in safety area.

對醫師之提示 **Note to physician**: 若是吸入, 請考慮輸氧, 若是食入, 應考慮胃的傷害, 避免碳酸鹽或重碳酸鹽。 For inhalation, consider oxygen. For ingestion, consider gastric ravage. Avoid carbonates, bicarbonates.

V. 滅火措施 Fire Fighting Measure

閃點 **Flash Point** : -20 °C (閉杯 Closed Cup)

自燃點 **Auto-ignition** : 465 °C

燃燒上下限 **Low / Upper Flammable limits** : 2.6 – 12.8 %

適用滅火劑 **Extinguishing Media** : 使用水霧, 泡沫, 化學乾粉或二氧化碳滅火劑。 Use water spray, foam, dry chemical or carbon dioxide.

滅火時可能遭遇之危害 **Specific hazards may be encountered during fire-fighting**: 1. 氣體比空氣重, 會傳播至遠處, 遇火源可能造成回火。 2. 火場中可能產生毒性氣體。 3. 液體會浮於水面上, 反而將火勢蔓延開。 4. 火場中容器遇熱可能爆炸。 1. The steam is heavy than air, it will spread far away. It might be temper when somewhere has fire. 2. It might be produce poison air in the fire scene. 3. The liquid will float on the water, and it will help fire spread easily. 4. The container might be exploded when it's in the fire scene.

滅火程式 **Specific fire-fighting methods**: 1. 不宜用水霧滅火, 但可噴水霧吸熱冷卻容器及保護暴露於火場的物質。 2. 如外洩物未著火, 可噴水霧驅散蒸氣、保護止洩人員並將外洩物沖離。 3. 撤退並自安全距離或受保護的地點滅火。 4. 位於上風處以避免危險的蒸氣和有毒的分解物。 5. 滅火前先阻止溢漏, 如果不能阻止溢漏且周圍無任何危險, 讓火燒完, 若沒有阻止溢漏而先行滅火, 蒸氣會與空氣形成爆炸性混合物而再引燃。 6. 隔離未著火物質且保護人員。 7. 安全情況下將容器搬離火場。 8. 以水霧冷卻火場的貯槽或容器。 9. 以水霧滅火可能無效, 除非消防人員受過各種易燃液體之滅火訓練。 10. 如果溢漏未引燃, 噴水霧以分散蒸氣並保護試圖止漏的人員。 11. 以水柱滅火無效。 12. 大區域之大型火災, 使用無人操作之水霧控制架或自動搖擺消防水瞄。 13. 儘可能撤離火場並允許火燒完。 14. 遠離貯槽。 15. 貯槽安全閥已響起或因著火而變色時立即撤離。 1. The fire is not suitable to use water, but it can use water to cool down the containers and protect the materials in the fire scene. 2. If the leak material isn't on fire, it can use the water to cool down, and wash away the leak material to protect the people. 3. Moving to the safety area to put out a fire. 4. Moving to windward place to avoid the damage steam and poison material. 5. To stop leak before putting out a fire. Let the fire burn down, if it can't stop leaking and there are no damage things surrounding. Because the steam will mix the air to be the explode material and burn again. 6. To close off the material without fire and protect the staffs. 7. To move



the container out the fire scene in safe situation. 8. Using the water to cool down the tank or container in the fire scene. 9. It might be ineffective to use water to put out the fire, only when the fireguards who had trained to put out the fire in every liquid. 10. If the leak material without fire, immediately using water to scatter the steam and protecting the people who try to stop leak. 11. It's ineffectively to use water to put out the fire. 12. In big area fire, using self-motion sprinkle water spray machine. 13. As far as moving out the fire scene and let the fire burn down. 14. Leaving the tank away. 15. To leave immediately when the tank's safety gear ring or change color by fire.

消防人員之特殊防護裝備 **Special equipment for the protection of firefighters** : 消防人員必須配戴空氣呼吸器、防護手套、消防衣 The firefighters must wear the oxygen mask, protective gloves, and protective suit.

危害分解物 **Hazardous Decomposition**: 熱分解時會產生一氧化碳, 未知的有機化合物. Thermal decomposition could produce carbon monoxide, unidentified organic compounds.

VI. 洩漏處理方法 Accidental Release Measures

洩漏處理程式 **Spill and leak procedure**: 熄滅火源, 若無危險, 盡量堵住外泄物. 若少量洩漏, 用沙或吸附性物質吸乾;若洩露量大, 先築堤將外泄物圍堵, 等待處理. 危險場所不能有煙火, 並隔離閑人. Shut off ignition sources. Stop leak if you can do it without risk. For small liquid spills, take up with sand or other absorbent material. For larger spills, dike far ahead of spill for later disposal. No smoking, flares of flames in hazard area. Keep unnecessary people away.

個人應注意事項 **Personal precautions** : 1.限制人員進入, 直至外溢區完全清乾淨為止。2.確定是由受過訓之人員負責清理之工作。3.穿戴適當的個人防護裝備. 1. Limit the staffs entry until the leak area complete clean. 2. Ensuring that the people who bear the clean job are trained. 3. To wear the personal equipment for protection.

環境保護 **Environmental protection** : 防止擴散, 避免流入下水道. Prevent diffusion, Prevent entry into the sewage system.

為了安全和環境的預防, 請參考完整的MSDS資料. For safety and environmental precautions please review entire MATERIAL SAFETY DATA SHEET, for necessary information.

VII. 安全處置與儲存方法 Handling and Storage

處置 **Handling** : 保持工作場所通風良好. Ensure efficient exhaust ventilation in the working area.

儲存 **Storage** : 密封儲存於 5--40°C. Keep container tightly closed and store between 5°C and 40°C.

VIII. 暴露預防措施 Exposure Control / Personal Protection

暴露界限 Exposure limits

成分 Component	八小時日時量平均容許濃度 TWA	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	生物指標 BEIs
丙酮 Acetone	750 ppm	1000 mg/m ³	---	下班後尿中 Acetone 為 100mg/L (Acetone content in urine after work is 100mg/L)
三氯三聚異氰酸 Trichloroisocyanuric Acid	不適合 Not available	不適合 Not available	---	---

個人防護設備 Personal Protection Equipment :

- 通風防護 **Ventilation protection** : 保持工作場所通風良好. Ensure efficient exhaust ventilation in the working area.
- 呼吸防護 **Respirator protection**: 避免過長或重複呼吸其蒸氣或煙霧, 若超過職業暴露限制, 請佩戴 NIOSH 確認的呼吸器. Avoid prolonged or repeated breathing of vapor or mists. If exposure may exceed occupational exposure limits, use a NIOSH approved respirator to prevent overexposure.
- 眼部防護 **Eye protection** : 戴護目鏡. Wear chemical goggles.
- 手部防護 **Hand protection** : 建議戴防滲橡膠手套. Impervious rubber gloves are recommended.
- 衣服防護 **Clothing protection** : 使用符合衛生標準的衣服. Standard industrial hygiene procedures should be practiced.

衛生措施 **Hygiene Procedures** : 遵循一般預防措施, 污染的衣物立即更換, 工作後洗手. Observe the common precautionary measure; contaminated clothes must be changed immediately. Wash hands after



work is completed.

IX. 物理及化學性質 Physical and Chemical Properties / Characteristics

外觀 Appearance : 無色透明液體 Colorless transparent liquid
沸點/沸點範圍 Boiling Point / Boiling Range : 56 °C
氣味 Odor : 似酮味. Like ketone odor
比重 Specific Gravity : 0.79 (水 Water=1)
溶解度 Solubility in Water : 可溶解 miscible
閃點 Flash Point : -20 °C (閉杯 Closed Cup)
自燃點 Auto-ignition : 465 °C
燃燒上下限 Low / Upper Flammable limits : 2.6 – 12.8 %
pH value : —
嗅覺閾值 Odor threshold : 3.6-653ppm(偵測 Detect) 、33-699ppm(覺察 Sense)
易燃性(固體、氣體) Flammability(solid,gas) : —
分解溫度 Decomposition temperature : —
蒸氣壓 Vapor pressure : 180mmHg(20 °C)
蒸氣密度 Vapor density : 2 (空氣 Air=1)
辛醇/水分配係數 Partition coefficient(n-octanol/water,log Kow) : -0.24
揮發速率 Evaporation rate :5.6 (乙酸丁酯 Butyl Acetate=1)

X. 安定性及反應性 Stability and Reactivity

安定性 Stability : 安定. Stable.
特殊狀況可能之危害反應 Possible hazardous reactions under specific conditions :1.靜電。2.火花。3.明火。4.其他引火源。5.強氧化劑(如過氧化物、硝酸鹽或過氯酸鹽):會增高起火及爆炸的危險性。1. Static electricity. 2. Spark. 3. Fire. 4. Other flammable material. 5. Strong oxidant (Ex: peroxide, nitrate, perchlorate can increase the opportunity of fire and explode.
應避免之狀況 Conditions to Avoid : 遠離火源. Keep away from flame.
應避免之物質 Incompatibility : 還原劑 (如酯類, 胺類). Reducing agents (such as ester, amines).
危害分解物 Hazardous Decomposition Products : 熱分解時會產生可燃有毒的氣體. Formation of combustible and noxious fumes during thermal decomposition.

XI. 毒性資料 Toxicological Information

• 丙酮 Acetone : 毒性資料 Toxicity data : LC50 inhalation-rat 50100 ppm/6H; 50100 ppm/6H(大鼠, 吸入) LD50 oral-rat 5800 mg/kg 5800 mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system (中樞神經系統)
• 三氯三聚異氰酸 Trichloroisocyanuric Acid : 毒性資料 Toxicity data : LD50 oral-rat 406-750 mg/kg ; 406-750 mg/Kg (大鼠、吞食)
暴露途徑 Routes of exposure :吸入、皮膚接觸、眼睛接觸、食入. Breath, skin contact, eye contact, eats.
症狀 Symptoms :刺激感、噁心、嘔吐、頭痛. Stimulate. Nausea. Puke. Headache.
急毒性 Acute toxicity : 皮膚:1.直接接觸到液體可能導致輕度皮膚刺激 吸入:1.毒性極低,主要是抑制中樞神經,會導致頭昏眼花及噁心。2.高濃度可導致意識喪失。3.蒸氣可會刺激鼻子和喉嚨。 食入:1.會導致喉嚨痛、噁心及腹瀉。2.嘔吐時可能會吸入肺部造成嚴重肺刺激、損壞肺組織或死亡。 眼睛:1.300ppm 蒸氣會刺激眼睛 2.液體濺到眼睛也會刺激 Skin: Directly contact the liquid would lead to the imponderability skin allergy. Breath: 1.lower poison and it mainly effects on central nervous system, will lead to dizziness and nausea. 2. High concentration steam will lead to lose the mind. 3. The steam will stimulate nose and throat. Eat: 1. It will lead to throat pain, nausea, and diarrhea. 2. People might inhale it into lungs when vomiting and it will cause serious damage on lungs or even death. Eye: 1.300ppm steam will stimulate eyes. 2. The liquid also will stimulate eyes.
慢毒性或長期毒性 Chronic toxicity or long term toxicity :1.會溶解皮膚油脂,長期接觸可能導致皮膚炎



It will dissolve the skin's oil; it leads to dermatitis in long term.

XII. 環境資料 Ecological Information

<p>• 丙酮 Acetone :</p> <p>生態毒性資料 Ecotoxicity Data: LC50 (魚類 Fishary toxicity) : 8300-40000mg/96H EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : 10mg/48H 生物濃縮係數 (BCF) : 0.69</p> <p>• 三氯三聚異氰酸 Trichloroiso cyanuric Acid 環境毒性資料 Ecotoxicity Data: LC50 (魚類 Fishary toxicity) : □0.1mg/96H EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : - 生物濃縮係數 (BCF) : -</p>
<p>持久性及降解性 Persistence and degradability : 1.具有高度的抗生物分解性。2.當釋放至水中，預期會揮發及滲入地下。3.當釋放至大氣中，預期會與氫氧自由基反應，半衰期約 52 小時。1. High bioresistance. 2. It expects to evaporate or infiltrate in the ground when put in the water. 3. It expects to reaction with hydrogen when put in the air and its half-life is 52 hours.</p>
<p>生物蓄積性 Bioaccumulative potential : 因會很迅速代謝及排出，故不太可能蓄積。It will not accumulate because it's easy to drain out.</p>
<p>土壤中之流動性 Mobility in soil : 當釋放至土壤中，預期會揮發及滲入地下。It expects to evaporate or infiltrate in the ground when put in the soil.</p>
<p>其他不良反應 Other adverse effects : -</p>

XIII. 廢棄處置方法 Disposal Information

<p>廢棄處置方法 Waste disposal methods : 依聯邦，國家或地方法規處理。Waste disposal should be in accordance with existing federal, state and local environmental regulations.</p> <p>空容器警告 Empty containers warnings : 空容器可能含有化學殘留物，即使已倒空，也要參照物質安全資料表 & 標籤處理。Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.</p>
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XIV. 運輸資料 Transport Information

海運名稱 Dot Shipping Name	聯合國運輸編號 UN Number	危害等級 Dot Hazard Class	包裝分類 PCK GRP
易燃液體 Inflammable Liquid	1993	3	II

XV. 法規資料 Regulation Information

<p>• TSCA: 所有成分都在 TSCA 詳細目錄中。All components are on the TSCA inventory.</p> <p>• 歐共體危險，安全短語 EC Risk and Safety Phrases: R11 : 高度易燃。Highly flammable. R36 : 刺激眼睛。Irritating to eyes. R66 : 重複的接觸會引起皮膚乾燥或裂口。Repeated exposure may cause skin dryness or cracking. R67 : 蒸汽可能引起睡眠或頭暈。Vapours may cause drowsiness and dizziness. S09 : 放置於通風良好的地方。Keep container in a well ventilated place. S16 : 遠離火源，嚴禁吸煙。Keep away from sources of ignition-No smoking. S25 : 避免接觸到眼睛與皮膚。Avoid contact with skin and eyes. S33 : 防止靜電。Take precautionary measures against static discharges. S43 : 在發生火災時用沙，土，化學粉末，醇類泡沫滅火劑滅火。In case of fire use sand, earth, chemical powder or alcohol type foam.</p>
<p>適用法規 Applicable regulations : 1.勞工安全衛生設施規則 2.危險物與有害物標示及通識規則 3.勞工作業環境空氣中有害物容許濃度標準 4.道路交通安全規則 5.事業廢棄物貯存清除處理方法及設施標準 6.毒性化學物質管理法 7.公共危險物品及可燃性高壓氣體設置標準暨安全管理辦法 1. The Essentials of Labors Safety and Hygiene 2. The danger and passes with the harmful indication knows the rule 3. In laborer work ambient air harmful admissible concentration standard 4. Road traffic safety precaution 5. Enterprise rejects storing elimination processing method and facility standard 6. Toxic chemical substance</p>



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control law 7. Public dangerous goods and ignitable compressed gas establishment standard and safety control means

XVI. 其他資料 Other Information

資料來源 **Sources of information** : 台灣工業安全局 Taiwan industrial safety corporation.
美國 MDL 信息系統 U.S. MDL information systems, Inc.
本資料只適用於產品本身, 不適用於和其他混合使用. 根據我們的研究和可靠的資料, 我們認為它是精確的, 但不保證它的精確性. **The information given and the recommendations made herein apply to our products alone and not combined with other products. Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made.**

製表單位 Compile Section	名稱 Name : 第一研發課 First section of R & D department.				
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Rubber Primer 1015F

Product No.產品編號：	1015F	Compile editor 製表人：	Davie Zhu
Document No.文件編號：	The second edition 第二版	Compile date 製表日期：	2015/01/01

APPLICATIONS & CHARACTERISTICS 用途與特性：

1. Add B powder into 1015F and mix well before use.
 1. It is widely applied for RB & TPR chlorinating to increase the polarity.
 2. Once the B powder dissolved completely, it is ready to use.
 3. Easy operation, fast drying.
- ◇ 搭配 B 粉使用；
 - ◇ 廣泛應用於橡膠、TPR 材質之表面處理，用於材質表面進行氯化反應，改變極性；
 - ◇ 當 B 粉完全溶解後，便可以直接處理材質；
 - ◇ 乾燥快，操作簡單。

PHYSICAL PROPERTY 物性：

1. Appearance 外觀：Part A：Colorless transparent liquid 無色透明液體
Part B：White powder 白色粉末
2. Major Component 主要成份：Trichloroisocyanuric acid / Organic solvent
三氯三聚異氰酸 / 有機溶劑
3. Solid Content 固成份：B:2.0-3.0%
4. Viscosity 粘度：--- (DV-II or DV2T S62/60RPM, 25°C)
5. Pot life 可使用時間：6 hours 6 小時 (After mixing in B powder 加入 B 粉後)
Used within 2 hours can get the best performance. 2 小時內使用效果最佳。
6. Storage temp. 儲藏溫度：5-40℃
7. Shelf Life 有效期限：6 months 6 個月
8. For solvent components, please refer to MSDS. 溶劑成分請參照 MSDS.

OPERATION METHOD 使用方法：

1. Add part B into Part A, and shake till part B is completely dissolved.

Part A (Solvent)	100 g
Part B (Powder)	2 g

2. Record the mixing time on the container to help controlling the pot life.
3. The primer can't work once the solution turns yellow or generate precipitate.
4. The container should be made of ceramic or glass.
5. Apply the primer with yarn cloth on the material surface.

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6. After priming, complete drying is necessary, otherwise the cement will turn yellow and unable to get the best bonding performance.

7. Drying Conditions : Traditional Oven : 50±5□ x 2'-3'
NIR Oven : 50±5□ x 1'-2'

8. Bonding Process:

Rubber → Degreasing (or buff if 13 days after cured)

→ 1015F (2% B powder) → 45-55□ × 2'-3' → S/B or W/B PU cement

P.s. Drying condition is suggested to be set according to the operation of different materials, and special models.

◇ 將 B 劑加入 A 劑中混合直到 B 劑完全溶解。

Part A (有機溶劑)	100 克
Part B (B 粉)	2 克

◇ 記錄混合時間，以控制其可使用時間。

◇ 當處理劑發黃或發生沉澱，就不能夠繼續使用了。

◇ 必須用玻璃或陶瓷容器來盛裝。

◇ 用棉布沾取本劑塗在材質表面上。

◇ 處理材質後，必須完全乾燥，否則膠水將會發黃或影響拉力。

◇ 乾燥條件：傳統烘箱乾燥 50±5□ x 2'-3'

紅外線烘箱乾燥 50±5□ x 1'-2'

◇ 使用流程：

橡膠 → 水洗（或磨粗） → 1015F+2% B 粉 → 烘乾 → 上 PU 膠

備註：不同類型的烘箱，烘乾條件按實際操作而定；特殊型體依據鞋廠實際情況確定。

NOTICE 注意事項：

1. Please keep 1015F away from moisture and water.
2. Don't store the primed RB over 24 hours.
3. After priming, the primer must be dried completely, otherwise the cement will turn yellow and unable to get the best bonding performance.
4. Do not use metal container & mixer to mix or contain 1015F.
5. Please add 0.8-1.5% B powder for light-colored rubber priming.
Please add 1.5-3% B powder for regular rubber priming (if no yellowing concern).
6. It might cause yellowing. Please clean materials with 1015F (no B powder) when the primer leaks out and contaminates outsole part during operation to avoid yellowing.
7. The pot life of 1015F with B powder is 6 hours.

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8. Please make sure the containers and clips are free from contamination before using.
 9. Keep away from fire, store in cool, dry, well-ventilated place.
 10. Operator should wear PPE.
- ◇ 1015F (B 劑) 應避免接觸濕氣和水而失去效用。
 - ◇ 橡膠處理後不可放置超過 24 小時，以免影響處理效果。
 - ◇ 處理後若未完全乾燥即上膠，將會產生膠膜變黃或接著強度不良之現象。
 - ◇ 請勿使用金屬容器來攪拌或盛裝。
 - ◇ 淺色橡膠 B 粉添加量：0.8-1.5%；深色 (或無黃變顧慮) 橡膠 B 粉添加量：1.5-3%
 - ◇ 此產品易引起黃變，塗刷處理劑時如有外溢，則可用未添加 B 粉的 1015F 清洗乾淨，以免引起變黃。
 - ◇ 1015F 加入 B 粉後，室溫下可使用時間是 6 小時。
 - ◇ 使用前須確保盛裝容器和塗刷工具乾淨無污染。
 - ◇ 遠離火源，並儲存於陰涼，乾燥，通風之處。
 - ◇ 操作人員須配戴 PPE 防護用具。

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Material Data Sheet

I、物品名稱與廠商資料 Identification of the substance / preparation and company

物品名稱/編號 Product Information / Number : VNP-RN
製造商或供應商名稱地址及電話 Information on Producer/Supplier Name、Addresses、Phone : 南寶樹脂化學工廠股份有限公司 / 台南縣西港鄉南海村 12 號 NAN PAO RESINS CHEMICAL CO., LTD. / 12, Nan Hai Village, Shee Kang Shiang, Tainan, Taiwan, R.O.C. / (06) 7952801-8
緊急聯絡電話/傳真 Emergency Phone / Fax : (06)795-2801~8 / (06)7950079(台灣廠 Taiwan factory)
國家化學事故應急諮詢電話 National Consulting hotline for Chemical Accidents & Emergencies : 0532-83889090 ; 0532-83889191

II、危害辨識資料 Hazard Identification

緊急信息 Information in emergency : 高度易燃 Extremely flammable.	
物品危害分類 Product hazard class : 易燃液體第 2 級、腐蝕/刺激皮膚物質第 3 級、水環境之危害物質(慢性)第 2 級、吸入性危害物質第 1 級. Flammable liquid class:2, burn/irritate skin material class:3, Hazardous to the aquatic environment (Chronic toxicity) class:2, the inbreathe damage material class:1	
標示:火焰 fire,健康危害 health hazard 刺激物質 irritate skin material 環境危害 Hazardous to the aquatic environment	   
警示語 : 危險 SIGNAL WORD : Danger	
危害成分 : 聚異氰酸鹽 HAZARDOUS COMPONENTS : Polyisocyanate 乙酸乙酯 Ethyl Acetate	
危害警告訊息 : WARNING FOR HAZARD : 1. 易燃液體和蒸氣 1.Flammable liquid and vapor. 2. 造成輕微皮膚刺激 2.Lightly irritation to skin 3. 造成眼睛刺激 3.Irritation to eyes. 4. 長期或重複暴露可能會對器官造成傷害 4.Hazardous organ if expose for long term. 5. 如果吞食並進入呼吸道可能致命 5.It may be death if swallow and go into the respiratory system. 6. 對水生生物有毒並具有長期持續影響 6. It has poison to aquatic animal and effect for long term.	
危害防範措施 : AVOID HAZARD PROCEDURES : 1. 遠離火源 - 禁止吸煙 1.Keep away from flame and no smoking. 2. 操作時通風良好, 不用時容器蓋緊 2.Use in a well-ventilated area, keep container closed tightly. 3. 配戴防護口罩和手套 3.Use appropriate respirator and gloves. 4. 蓋緊容器 4.Close up the container.	
急救信息資料 Information in emergency : <ul style="list-style-type: none">• 眼睛接觸 Eye Contact : 如不及時清除, 會刺激眼睛, 或傷害眼膜. Irritating and may injure eye tissue if not removed promptly.• 皮膚接觸 Skin Contact : 經常或長期接觸會引起刺激或皮炎, 重複或長期接觸會引起皮膚脫脂, 導致皮膚刺激或乾燥. Frequent or prolonged contact may irritate and cause dermatitis. Repeated or prolonged contact may cause de-fatting of the skin, which may lead to skin irritation and / or dryness.• 吸入 Inhalation : 吸入過量可能會刺激呼吸道, 引起眼部刺激或嘔吐, 應注意吸入的濃度不要超過 TWA 值. Overexposure may be irritating to respiratory passages and cause other effects such as eye irritation or nausea. Care should be taken not to exceed the TWA.• 食入 Ingestion : 刺激口, 喉, 胃. 可能會引起胃部紊亂或傷害. 在吞食或嘔吐時少量液體會滲入呼吸系統, 可能會引起肺部浮腫, 支氣管肺炎. Irritating to mouth, throat and stomach. May cause gastric tract disorder and / or damage. Small amount of liquid aspirated into the respiratory system during ingestion or from vomiting, may cause bronchopneumonia of pulmonary edema.	

III、成分辨識資料 Composition / Information on Ingredients

混合物 Mixing:



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化學性質 Chemical Character:			
危害物質成分之中英文名稱 Hazardous Components Name	化學文摘社登記號碼 CAS No.	濃度或濃度範圍 Concentration / Percentage (%)	NFPA 危害等級 NFPA Hazard Rating
聚異氰酸鹽 Polyisocyanate	4151-51-3	17-21	H: 1 / F: 0 / R: 1
乙酸乙酯 Ethyl Acetate	141-78-6	78-82	H: 1 / F: 3 / R: 0
其他 Others	N/A	0 - 3	N/A

* H: 健康 Health F: 火災 Fire R: 反應 Reactivity

IV、急救措施 First Aid Measures

急救程式 Emergency and First Aid Procedures
<ul style="list-style-type: none">• 眼睛接觸 Eye Contact: 立即翻起上下眼皮用大量緩和流動的水清洗眼睛至少 20 分鐘。且將頭傾斜，避免化學品流入另一隻未受污染的眼睛，並立即就醫，且緊遵醫囑，每天檢查眼部。 Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.• 皮膚接觸 Skin Contact: 以大量清水或肥皂水洗清。脫掉嚴重污染的衣服，鞋。在再穿之前洗淨，如果刺激持續，請就醫。 Flush with large amount of water; Use soap if available. Remove grossly contaminated clothing, including shoes and launder before re-use. Discard shoes. If irritation persists, get medical attention.• 吸入 Inhalation : 將患者移至空氣清新處。如果呼吸困難，立即供氧；如果呼吸停止，立即施予人工呼吸並送醫治療。 Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.• 食入 Ingestion: 聯絡當地的毒害控制中心或立即就醫，不要讓無意識的患者嘔吐或喝液體的食物，如果患者無意識，將患者的頭側向一邊，並立即就醫。 Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. If person is unconscious, turn head to side. Get medical attention immediately.
最重要症狀及危害效應 The most important symptoms and hazardous effects : 毒性極低，主要是抑制中樞神經 Lower poison, and it mainly effects on central nervous system.
對急救人員之防護 The protection of first-aiders: 應穿著 C 級防護裝備在安全區實施急救 The person who should wear C class protect suit and carry out first-aid in safety area.

V、滅火措施 Fire Fighting Measure

閃點 Flash point : -4 °C
自燃點 Auto-ignition : 426 °C
燃燒上下限 Low/upper flammable limits : 2.0 -11.5 %
滅火劑 Extinguishing media : 使用水霧，泡沫，化學乾粉或者二氧化碳滅火劑。 Use water spray, foam, dry chemical or carbon dioxide.
滅火時可能遭遇之危害 Specific hazards may be encountered during fire-firhting : 1. 氣體比空氣重，會傳播至遠處，遇火源可能造成回火。 2. 火場中可能產生毒性氣體。 3. 液體會浮於水面上，反而將火勢蔓延開。 4. 火場中容器遇熱可能爆炸。 1. The steam is heavy than air, it will spread far away. It might be temper when somewhere has fire. 2. It might be produce poison air in the fire scene. 3. The liquid will float on the water, and it will help fire spread easily. 4. The container might be exploded when it's in the fire scene.
滅火程式 Specific fire-fighting methods : 1. 不宜用水霧滅火，但可噴水霧吸熱冷卻容器及保護暴露於火場的物質。 2. 如外洩物未著火，可噴水霧驅散蒸氣、保護止洩人員並將外洩物沖離。 3. 撤退並自安全距離或受保護的地點滅火。 4. 位於上風處以避免危險的蒸氣和有毒的分解物。 5. 滅火前先阻止溢漏，如果不能阻止溢漏且周圍無任何危險，讓火燒完，若沒有阻止溢漏而先行滅火，蒸氣會與空氣形成爆炸性混合物而再引燃。 6. 隔離未著火物質且保護人員。 7. 安全情況下將容器搬離火場。 8. 以水霧冷卻火場的貯槽或容器。 9. 以水霧滅火可能無效，除非消防人員受過各種易燃液體之滅火訓練。 10. 如果溢漏未引燃，噴水霧以分散蒸氣並保護試圖止漏的人員。 11. 以水柱滅火無效。 12. 大區域之大型火災，使用無人操作之水霧控制架或自動搖擺消防水瞄。 13. 儘可能撤離火場並允許火燒完。 14. 遠離貯槽。 15. 貯槽安全閥已響起或因著火而變色時立即撤離。 1. The fire is not suitable to use water, but it can use water to cool down the containers and protect the materials in the fire scene. 2. If the leak material isn't on fire, it can use the water to cool down, and wash away the leak material



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to protect the people. 3. Moving to the safety area to put out a fire. 4. Moving to windward place to avoid the damage steam and poison material. 5. To stop leak before putting out a fire. Let the fire burn down, if it can't stop leaking and there are no damage things surrounding. Because the steam will mix the air to be the explode material and burn again. 6. To close off the material without fire and protect the staffs. 7. To move the container out the fire scene in safe situation. 8. Using the water to cool down the tank or container in the fire scene. 9. It might be ineffective to use water to put out the fire, only when the fireguards who had trained to put out the fire in every liquid. 10. If the leak material without fire, immediately using water to scatter the steam and protecting the people who try to stop leak. 11. It's ineffectively to use water to put out the fire. 12. In big area fire, using self-motion sprinkle water spray machine. 13. As far as moving out the fire scene and let the fire burn down. 14. Leaving the tank away. 15. To leave immediately when the tank's safety gear ring or change color by fire.

消防人員之特殊防護裝備 **Special equipment for the protection of firefighters**: 消防人員必須配戴空氣呼吸器、防護手套、消防衣 The firefighters must wear the oxygen mask, protective gloves, and protective suit.

危害分解物 **Hazardous decomposition**: 熱分解為可燃有毒的氣體。 Formation of combustible and noxious fumes during thermal decomposition.

VI、洩漏處理方法 Accidental Release Measures

溢出和滲漏程式 **Spill and leak procedure**: 熄滅火源, 若無危險, 盡量堵住外泄物。若少量洩漏, 用沙或吸附性物質吸乾; 若洩露量大, 先築堤將外泄物圍堵, 等待處理。危險場所不能有煙火, 並隔離閑人。 Shut off ignition sources. Stop leak if you can do it without risk. For small liquid spills, take up with sand or other absorbent material. For larger spills, dike far ahead of spill for later disposal. No smoking, flares or flames in hazard area. Keep unnecessary people away.

個人應注意事項 **Personal precautions**: 1. 限制人員進入, 直至外溢區完全清乾淨為止。2. 確定是由受過訓之人員負責清理之工作。3. 穿戴適當的個人防護裝備。 1. Limit the staffs entry until the leak area complete clean. 2. Ensuring that the people who bear the clean job are trained. 3. To wear the personal equipment for protection.

為了安全和環境的預防, 請參考完整的 MSDS 資料。 For safety and environmental precautions, please review entire MATERIAL SAFETY DATA SHEET, for necessary information.

VII、安全處置與儲存方法 Handling and Storage

處置 **Handling**: 使用於通風良好的地方。 Use in a well ventilated area.

儲存 **Storage**: 儲存在陰涼乾燥的地方, 遠離熱, 火星, 火和濕氣, 避免吸入水蒸氣。 Store in a cool, dry place. away from heat, sparks, fire and moisture. Avoid breathing vapors..

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

暴露界限 **Exposure limits**:

成分 Component	八小時日時量平均容許濃度 TWA	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	生物指標 BEIs
聚異氰酸鹽 Polyisocyanate	不合適 Not available	不合適 Not available	---	---
乙酸乙酯 Ethyl Acetate	400 ppm	1440 mg/m ³	---	---

個人防護設備 **Personal Protection Equipment**

- 呼吸防護 **Respirator protection**: 避免過長或重複呼吸其蒸氣或煙霧。 Avoid prolonged or repeated breathing of vapor or mists.
- 手部防護 **Hand Protection**: 戴橡膠手套。 Rubber gloves.
- 眼部防護 **Eye Protection**: 佩戴具有側防的眼鏡, 當有濺出或需要噴塗時, 佩戴防濺的眼罩或面罩。沖眼站應可用。 Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
- 衣服防護 **Clothing Protection**: 使用符合衛生標準的衣服。 Standard industrial hygiene procedures should be practiced.

通風 **Ventilation**: 一般, 當地防爆抽風系統。 General; Local explosion-proof exhaust ventilation.

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



Material Data Sheet

外觀 Appearance :液體 Liquid
顏色 Color : 無色-淡黃色. Colorless –pale yellow
氣味 Odor : 酯類氣味. Ester odor
溶解度 Solubility in Water : 不溶. Insoluble
沸點 Boiling point (deg. C) :77°C (Ethyl acetate)
蒸氣壓 Vapor pressure (mm Hg) :60-80 mmHg
蒸氣密度 Vapor density :3.03 (Air=1.0)
蒸發能力 Evaporation rate :0.9-0.95(water=1)
閃點 Flash point : -4 °C
自燃點 Auto-ignition : 426 °C
燃燒上下限 Low/upper flammable limits : 2.0 -11.5 %
pH value : 6.8
嗅覺閾值 Odor threshold : - ppm(偵測)、 - ppm(覺察)
易燃性(固體、氣體) Flammability(solid,gas) : -
分解溫度 Decomposition temperature : -
蒸氣壓 Vapor pressure : -
蒸氣密度 Vapor density : - (空氣=1)
辛醇/水分分配係數 Partition coefficient(n-octanol/water,log Kow) : -
揮發速率 Evaporation rate : - (乙酸丁酯=1)

X、安定性及反應性 **Stability and Reactivity**

安定性 Stability : 通常情況下安定. Stable under normal conditions.
特殊狀況可能之危害反應 Possible hazardous reactions under specific conditions :1.靜電。2.火花。3.明火。4.其他引火源。5.強氧化劑(如過氧化物 硝酸鹽或過氯酸鹽:會增高起火及爆炸的危險性。1. Static electricity. 2. Spark. 3. Fire. 4. Other flammable material. 5. Strong oxidant (Ex: peroxide, nitrate, perchlorate can increase the opportunity of fire and explode.
應避免之狀況 Conditions to Avoid : 避免熱, 火, 其他火源和水源. Avoid contact with heat, spark, flames, other sources of ignition and moisture.
危害分解物 Hazardous Decomposition Products : 熱分解時會產生可燃有毒的氣體. Formation of combustible and noxious fumes during thermal decomposition.

XI、毒性資料 **Toxicological Information**

<p>• 乙酸乙酯 Ethyl Acetate :</p> <p>毒性資料 Toxicity data : LC50 inhalation-rat 16000 ppm/6H ; 16000 ppm /6H(大鼠, 吸入) LD50 oral-rat 5600 mg/kg 5600mg/kg(大鼠, 吞食)</p> <p>傷害器官 Target organs : Central nervous system . (中樞神經系統)</p>
<p>暴露途徑 Routes of exposure:吸入、皮膚接觸、眼睛接觸、食入. Breath, skin contact, eye contact, eats.</p> <p>症狀 Symptoms:刺激感、噁心、嘔吐、頭痛. Stimulate. Nausea. Puke. Headache.</p> <p>急毒性 Acute toxicity:</p> <p>皮膚:1.直接接觸到液體可能導致輕度皮膚刺激</p> <p>吸入:1.毒性極低, 主要是抑制中樞神經, 會導致頭昏眼花及噁心。2.高濃度可導致意識喪失。3.蒸氣可會刺激鼻子和喉嚨。</p> <p>食入:1.會導致喉嚨痛、噁心及腹瀉。2.嘔吐時可能會吸入肺部造成嚴重肺刺激、損壞肺組織或死亡。</p> <p>眼睛:1.300ppm 蒸氣會刺激眼睛 2.液體濺到眼睛也會刺激</p> <p>LD50(測試動物, 吸收途徑):</p> <p>LC50(測試動物, 吸收途徑):</p> <p>Skin: Directly contact the liquid would lead to the imponderability skin allergy.</p> <p>Breath: 1.lower poison and it mainly effects on central nervous system. 2. High concentration steam will lead to lose the mind. 3. The steam will stimulate nose and throat.</p> <p>Eat: 1. It will lead to throat pain, nausea, and diarrhea. 2. When people nausea, it might be hurt the lung or death</p> <p>Eye: 1.300ppm steam will stimulate eyes. 2. The liquid also will stimulate eyes.</p>
<p>慢毒性或長期毒性 Chronic toxicity or long term toxicity:1.會溶解皮膚油脂, 長期接觸可能導致皮膚炎 It will dissolve the skin's oil; it leads to dermatitis in long term.</p>



XII、環境資料 Ecological Information

<p>• 乙酸乙酯 Ethyl Acetate 生態毒性資料 Ecotoxicity Data: LC50 (魚類) : - EC50 (水生無脊椎動物) : - 生物濃縮係數 (BCF) : - 環境總結 Environmental Summary: Harmful to aquatic life. (有害於水生生活)</p>
<p>持久性及降解性 Persistence and degradability : 1.具有高度的抗生物分解性。2.當釋放至水中，預期會揮發及滲入地下。3.當釋放至大氣中，預期會與氫氧自由基反應，半衰期約 52 小時。1. High bio-resistance. 2. It expects to evaporate or infiltrate in the ground when put in the water. 3. It expects to reaction with hydrogen when put in the air. And its half-life is 52 hours</p>
<p>生物蓄積性 Bioaccumulative potential : 因會很迅速代謝及排出，故不太可能蓄積。 It will not accumulate because it's easy to drain out.</p>
<p>土壤中之流動性 Mobility in soil : 當釋放至土壤中，預期會揮發及滲入地下。 It expects to evaporate or infiltrate in the ground when put in the soil.</p>
<p>其他不良反應 Other adverse effects : -</p>

XIII、廢棄處置方法 Disposal Information

<p>廢棄處置方法 Waste disposal methods : 依聯邦，國家或地方法規處理。 Waste disposal should be in accordance with existing federal, state and local environmental regulations.</p>
<p>空容器警告 Empty containers warnings : 空容器可能含有化學殘留物，即使已倒空，也要參照物質安全資料表 & 標籤處理。 Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.</p>

XIV、運輸資料 Transport Information

海運名稱 Dot Shipping Name	聯合國運輸編號 UN Number	危害等級 Dot Hazard Class	包裝分類 PCK GRP
易燃液體 Inflammable Liquid	1993	3	II

XV、法規資料 Regulation Information

<p>TSCA / *EC RISK and SAFETY PHRASES: 本產品符合毒性物質控制法的全部要求。 Taiwan EPA TSCA : This product is in compliance with the Toxic Substances Control Act's Inventory requirements. R36: 刺激眼睛。 Irritating to eyes. R66: 重複的接觸會引起皮膚乾燥或裂口。 Repeated exposure may cause skin dryness or cracking R67: 蒸汽可能引起睡眠或頭暈。 Vapors may cause drowsiness and dizziness S16: 遠離火源，嚴禁吸煙。 Keep away from sources of ignition-No smoking S43 : 在發生火災時用沙，土，化學粉末或醇類泡沫滅火劑滅火。 In case of fire use sand, earth, chemical powder or alcohol type foam. S51; 使用於通風良好的地方。 Use only in well-ventilated areas. 欲知詳情請致電 06-7956634. If you need more information about the inventory status of this product call 06-7956634</p> <p>適用法規 Applicable regulations : 1.勞工安全衛生設施規則 2.危險物與有害物標示及通識規則 3.勞工作業環境空氣中有毒物容許濃度標準 4.道路交通安全規則 5.事業廢棄物貯存清除處理方法及設施標準 6.毒性化學物質管理法 7.公共危險物品及可燃性高壓氣體設置標準暨安全管理辦法 1. The Essentials of Labors Safety and Hygiene 2. The danger and passes with the harmful indication knows the rule 3. In laborer work ambient air harmful admissible concentration standard 4. Road traffic safety precaution 5. Enterprise rejects storing elimination processing method and facility standard 6. Toxic chemical substance control law 7. Public dangerous goods and ignitable compressed gas establishment standard and safety control means</p>

XVI、Other Information



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資料來源 **Sources of information:** 台灣工業安全局 Taiwan industrial safety corporation
美國 MDL 信息系統 U.S. MDL information systems, Inc.
本資料只適用於本產品本身，不適用於和其他混合使用。根據我們的研究和可靠的資料，我們認為它是精確的，但不保證這它的精確性。The information given and the recommendations made herein apply to our products alone and not combined with other products. Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made.

製表單位 Compile Section	名稱 Name : 第一研發課 First section of R & D department		
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Hardener 硬化劑 RN			
Product No.產品編號：	RN	Compile editor 製表人：	Davie Zhu
Document No.文件編號：	The second edition 第二版	Compile date 製表日期：	2015/01/01

APPLICATION & CHARACTERISTIC 用途與特性：

RN is aromatic Polyisocyanate hardener. It has excellent physical property. Using with PU type adhesives will improve adhesion quality.

◆ RN 屬芳香族聚異氰酸酯，具有優良的物性，配合 PU 膠使用，可提高膠水物性。

PHYSICAL PROPERTY 物性：

1. Appearance 外觀：water clear liquid 清水狀液體
2. Functional Component 有效成份：polyisocyanate 聚異氰酸酯
3. Solid Content 固成份：28.0±3.0%
4. Viscosity 粘度：---
5. NCO 含量：7.2±0.5%
6. Stabilization 穩定性：6 months 6 個月
7. Storage temp：儲藏溫度：5~40℃
8. For solvent components, pls refer to MSDS. 溶劑成分請參照 MSDS.

OPERATION METHOD 操作方法：

1. Formulation ratio (by weight):調配比(按重量)

SBA (油性膠)	Humidity (相對濕度)	1kg	2kg	3kg	4kg	5kg
Hardener 硬化劑	≤80%	40g	80g	120g	160g	200g
	>80%	50g	100g	150g	200g	250g

2. Add the hardener into the adhesive, and stir it to mixing evenly.
3. Increase adding amount in rainy day or higher moisture.
4. When adhesive mixed with hardener, use it within pot life.

(PU glue +RN about 2-3 hours)

- ◆ 將硬化劑添加到膠水中後，請混合均勻並劇烈攪拌。
- ◆ 雨天或濕度較大時，請增加硬化劑的用量。
- ◆ 膠水添加硬化劑後，應在可使用時間內使用。(PU 膠 + RN 後約 2-3 小時)

南寶樹脂化學工廠股份有限公司
NAN PAO RESINS CHEMICAL CO., LTD.

總公司•台南縣西港鄉南海村12號 Tel: (06)7952801-8 Fax: (06)7950079 Head Office•12, Nan Hai Village, Shee Kang Shiang, Tainan, Taiwan
台北辦事處•台北市重慶北路3段235-1號 Tel: (02)25942172 Fax: (02)25964485 Taipei Office•235-1, Sec. 3, Chung Ching N. Rd., Taipei, Taiwan
www.nanpaoresins.com.tw

**NOTICE 注意事項：**

1. Opened containers should be closed to prevent curing or inefficiency of hardener.
 2. Please take respirator and goggle to mixing hardener.
 3. Keep hardener away from skin, when it is touched on the skin, wash it with water. If it is splashed in eyes, wash it with large amount of water and go to see a doctor.
 4. Keep away from flame, store in cool, dry, well-ventilated place.
 5. Operator must wear PPE.
- ◇ 盛裝硬化劑的容器開啟後，應注意密閉，以防結晶或失效。
 - ◇ 混合硬化劑時，請配戴口罩和護目鏡。
 - ◇ 應避免接觸皮膚，若沾到皮膚請用水洗，若沾入眼睛，立即用大量水沖洗並去就醫。
 - ◇ 遠離火源，並儲存於陰涼、乾燥、通風之處。
 - ◇ 操作人員須配戴 PPE 防護用具。

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Material Safety Data Sheet

I. 物品名稱與廠商資料 Identification of the substance / preparation and company

物品名稱/編號 Product Information / Number : No.256
製造商或供應商名稱地址及電話 Information on Producer/Supplier Name、Addresses、Phone : 南寶樹脂化學工廠股份有限公司 / 台南市西港區南海里 12 號 (06) 7952801-8. NAN PAO RESINS CHEMICAL CO., LTD. / 12, Nan Hai Village, Xigang Dist., Tainan City, Taiwan, R.O.C. 886-06-7952801-8
緊急聯絡電話/傳真 Emergency Phone / Fax : (06)795-2801~8 / (06)7950079 (台灣廠 Taiwan factory)
國家化學事故應急諮詢電話 National Consulting hotline for Chemical Accidents & Emergencies : 0532-83889090 ; 0532-83889191

II. 危害辨識資料 Hazard Identification

緊急信息 Information in emergency : 高度易燃 Highly flammable.
物品危害分類 Product hazard class : 易燃液體第 2 級、腐蝕/刺激皮膚物質第 3 級、水環境之危害物質(慢性)第 2 級、吸入性危害物質第 1 級. Flammable liquid class:2, burn/irritate skin material class:3, Hazardous to the aquatic environment (Chronic toxicity) class:2, the inbreath damage material class:1
標示 sign:火焰 fire,健康危害 health hazard 刺激物質 irritate material 環境危害 Hazardous to the aquatic environment
   
警示語：危險 SIGNAL WORD : Danger
危害成分：甲基環己烷 HAZARDOUS COMPONENTS : Methyl Cyclohexane 丁酮 Methyl Ethyl Ketone 乙酸乙酯 Ethyl Acetate
危害警告訊息：WARNING FOR HAZARD : 1. 易燃液體和蒸氣 1.Flammable liquid and vapor. 2. 造成輕微皮膚刺激 2.Lightly irritation to skin 3. 造成眼睛刺激 3.Irritation to eyes. 4. 長期或重複暴露可能會對器官造成傷害 4.Hazardous organ if expose for long term or repeatedly. 5. 如果吞食並進入呼吸道可能致命 5.It may be death if swallow and go into the respiratory system. 6. 對水生生物有毒並具有長期持續影響 6. It has poison to aquatic animal and effect for long term.
危害防範措施：AVOID HAZARD PROCEDURES : 1. 遠離火源—禁止吸煙 1.Keep away from flame and no smoking. 2. 操作時通風良好，不用時容器蓋緊 2.Use in a well-ventilated area , keep container closed tightly. 3. 配戴防護口罩和手套 3.Use appropriate respirator and gloves. 4. 蓋緊容器 4.Close up the container.
<ul style="list-style-type: none">• 眼睛接觸 Eye Contact : 如不及時清除，會刺激眼睛，或傷害眼膜. Irritating and may injure eye tissue if not removed promptly.• 皮膚接觸 Skin Contact : 經常或長期接觸會引起刺激或皮炎，重複或長期接觸會引起皮膚脫脂，導致皮膚刺激或乾燥. Frequent or prolonged contact may irritate and cause dermatitis. Repeated or prolonged contact may cause de-fatting of the skin, which may lead to skin irritation and / or dryness.• 吸入 Inhalation : 吸入過量可能會刺激呼吸道，引起眼部刺激或嘔吐，應注意吸入的濃度不要超過 TWA 值. Overexposure may be irritating to respiratory passages and cause other effects such as eye irritation or nausea. Care should be taken not to exceed the TWA.• 食入 Ingestion : 刺激口，喉，胃. 可能會引起胃部紊亂或傷害. 在吞食或嘔吐時少量液體會滲入呼吸系統，可能會引起肺部浮腫，支氣管肺炎. Irritating to mouth, throat and stomach. May cause gastric tract disorder and / or damage. Small amount of liquid aspirated into the respiratory system during ingestion or from vomiting, may cause bronchopneumonia of pulmonary edema.



III. 成分辨識資料 Composition / Information on Ingredients

混合物 Mixing :

危害物質成分之中英文名稱 Hazardous Components Name	化學文摘社登記號碼 CAS No.	濃度或濃度範圍 Concentration / Percentage (%)
丁酮 Methyl Ethyl Ketone	78-93-3	10 -15
乙酸乙酯 Ethyl Acetate	141-78-6	10-15
甲基環己烷 Methyl Cyclohexane	108 - 87 - 2	70-80

IV. 急救措施 First Aid Measures

- 吸入 **Inhalation** : 將患者移至空氣清新處. 如果呼吸困難, 立即供氧; 如果呼吸停止, 立即施予人工呼吸並送醫治療. Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.
- 皮膚接觸 **Skin Contact** : 以大量清水或肥皂水洗清. 脫掉嚴重污染的衣服, 鞋. 在再穿之前洗淨, 如果刺激持續, 請就醫. Flush with large amount of water; Use soap if available. Remove grossly contaminated clothing, including shoes and launder before re-use. Discard shoes. If irritation persists, get medical attention.
- 眼睛接觸 **Eye Contact** : 立即翻起上下眼瞼以大量水沖洗 15 分以上, 並及時送醫治療. Immediately flush eyes with large amount of water for at least 15 minutes, lifting upper and lower lids. Get prompt medical .
- 食入 **Ingestion** : 避免催吐, 如患者清醒, 給予牛奶或水以稀釋胃液, 注意保暖, 保持休息, 並送醫治療. Do not induce vomiting. If individual is conscious, give milk or water to dilute stomach contents. Keep warm and quiet. Get prompt medical attention.

對醫師之提示 **Note to physician**: 若是吸入, 請考慮輸氧, 若是食入, 應考慮胃的傷害, 避免碳酸鹽或重碳酸鹽. For inhalation, consider oxygen. For ingestion, consider gastric ravage. Avoid carbonates, bicarbonates.

最重要症狀及危害效應 The most important symptoms and hazardous effects : 毒性極低, 主要是抑制中樞神經 Lower poison, and it mainly effects on central nervous system.

對急救人員之防護 The protection of first-aiders : 應穿著 C 級防護裝備在安全區實施急救 The person who should wear C class protect suit and carry out first-aid in safety area.

V. 滅火措施 Fire Fighting Measure

閃點 **Flash Point** : -1 °C (閉杯 Closed Cup)

自燃點 **Auto-ignition** : 291 °C

燃燒上下限 **Low / Upper Flammable limits** : 1.7 – 10 %

適用滅火劑 **Extinguishing Media** : 使用水霧, 泡沫, 化學乾粉或二氧化碳滅火劑. Use water spray, foam, dry chemical or carbon dioxide.

滅火時可能遭遇之危害 **Specific hazards may be encountered during fire-firhting**: 1. 氣體比空氣重, 會傳播至遠處, 遇火源可能造成回火. 2. 火場中可能產生毒性氣體. 3. 液體會浮於水面上, 反而將火勢蔓延開. 4. 火場中容器遇熱可能爆炸. 1. The steam is heavy than air, it will spread far away. It might be temper when somewhere has fire. 2. It might be produce poison air in the fire scene. 3. The liquid will float on the water, and it will help fire spread easily. 4. The container might be exploded when it's in the fire scene.

滅火程式 **Specific fire-fighting methods**: 1. 不宜用水霧滅火, 但可噴水霧吸熱冷卻容器及保護暴露於火場的物質. 2. 如外洩物未著火, 可噴水霧驅散蒸氣、保護止洩人員並將外洩物沖離. 3. 撤退並自安全距離或受保護的地點滅火. 4. 位於上風處以避免危險的蒸氣和有毒的分解物. 5. 滅火前先阻止溢漏, 如果不能阻止溢漏且周圍無任何危險, 讓火燒完, 若沒有阻止溢漏而先行滅火, 蒸氣會與空氣形成爆炸性混合物而再引燃. 6. 隔離未著火物質且保護人員. 7. 安全情況下將容器搬離火場. 8. 以水霧冷卻火場的貯槽或容器. 9. 以水霧滅火可能無效, 除非消防人員受過各種易燃液體之滅火訓練. 10. 如果溢漏未引燃, 噴水霧以分散蒸氣並保護試圖止漏的人員. 11. 以水柱滅火無效. 12. 大區域之大型火災, 使用無人操作之水霧控制架或自動搖擺消防水瞄. 13. 儘可能撤離火場並允許火燒完. 14. 遠離貯槽. 15. 貯槽安全閥已響起或因著火而變色時立即撤離. 1. The fire is not suitable to use water, but it can use water to cool down the containers and protect the materials in the fire scene. 2. If the leak material isn't on fire, it can use the water to cool down, and wash away the leak material to protect the people. 3. Moving to the safety area to put out a fire. 4. Moving to windward place to avoid the damage steam and poison material. 5. To stop leak before putting out a fire. Let the fire burn down, if it can't stop leaking and there are no damage things surrounding. Because the steam will mix the air to be the



explode material and burn again. 6. To close off the material without fire and protect the staffs. 7. To move the container out the fire scene in safe situation. 8. Using the water to cool down the tank or container in the fire scene. 9. It might be ineffective to use water to put out the fire, only when the fireguards who had trained to put out the fire in every liquid. 10. If the leak material without fire, immediately using water to scatter the steam and protecting the people who try to stop leak. 11. It's ineffectively to use water to put out the fire. 12. In big area fire, using self-motion sprinkle water spray machine. 13. As far as moving out the fire scene and let the fire burn down. 14. Leaving the tank away. 15. To leave immediately when the tank's safety gear ring or change color by fire.

消防人員之特殊防護裝備 **Special equipment for the protection of firefighters** : 消防人員必須配戴空氣呼吸器、防護手套、消防衣 The firefighters must wear the oxygen mask, protective gloves, and protective suit.

危害分解物 **Hazardous Decomposition**: 熱分解時會產生一氧化碳, 未知的有機化合物. Thermal decomposition could produce carbon monoxide, unidentified organic compounds.

VI. 洩漏處理方法 Accidental Release Measures

洩漏處理程式 **Spill and leak procedure**: 熄滅火源, 若無危險, 盡量堵住外泄物. 若少量洩漏, 用沙或吸附性物質吸乾;若洩露量大, 先築堤將外泄物圍堵, 等待處理. 危險場所不能有煙火, 並隔離閑人. Shut off ignition sources. Stop leak if you can do it without risk. For small liquid spills, take up with sand or other absorbent material. For larger spills, dike far ahead of spill for later disposal. No smoking, flares of flames in hazard area. Keep unnecessary people away.

個人應注意事項 **Personal precautions** : 1.限制人員進入, 直至外溢區完全清乾淨為止。2.確定是由受過訓之人員負責清理之工作。3.穿戴適當的個人防護裝備. 1. Limit the staffs entry until the leak area complete clean. 2. Ensuring that the people who bear the clean job are trained. 3. To wear the personal equipment for protection.

環境保護 **Environmental protection** : 防止擴散, 避免流入下水道. Prevent diffusion, Prevent entry into the sewage system.

為了安全和環境的預防, 請參考完整的MSDS資料. For safety and environmental precautions please review entire MATERIAL SAFETY DATA SHEET, for necessary information.

VII. 安全處置與儲存方法 Handling and Storage

處置 **Handling** : 保持工作場所通風良好. Ensure efficient exhaust ventilation in the working area.

儲存 **Storage** : 密封儲存於 5--40°C. Keep container tightly closed and store between 5°C and 40°C.

VIII. 暴露預防措施 Exposure Control / Personal Protection

暴露界限 Exposure limits

Table with 5 columns: Component, 八小時日時量平均容許濃度 TWA, 短時間時量平均容許濃度 STEL, 最高容許濃度 CEILING, 生物指標 BEIs. Rows include Methyl Ethyl Ketone, Ethyl Acetate, and Methyl Cyclohexane.

個人防護設備 Personal Protection Equipment :

- 通風防護 Ventilation protection : 保持工作場所通風良好. Ensure efficient exhaust ventilation in the working area.
呼吸防護 Respirator protection: 避免過長或重複呼吸其蒸氣或煙霧, 若超過職業暴露限制, 請佩戴 NIOSH 確認的呼吸器. Avoid prolonged or repeated breathing of vapor or mists. If exposure may exceed occupational exposure limits, use a NIOSH approved respirator to prevent overexposure.
眼部防護 Eye protection : 戴化學護目鏡. Wear chemical goggles.
手部防護 Hand protection : 建議戴防滲橡膠手套. Impervious neoprene-rubber gloves are recommended.
衣服防護 Clothing protection : 使用符合工業衛生標準的衣服. Standard industrial hygiene procedures should be practiced.



衛生措施 **Hygiene Procedures** : 遵循一般預防措施, 污染的衣物立即更換, 工作後洗手. Observe the common precautionary measure; contaminated clothes must be changed immediately. Wash hands after work is completed.

IX. 物理及化學性質 Physical and Chemical Properties / Characteristics

外觀 Appearance : 無色透明液體 Colorless transparent liquid
沸點/沸點範圍 Boiling Point / Boiling Range : 77 – 100 °C
氣味 Odor : 辛辣刺激味. Like Pungent odor
比重 Specific Gravity : 0.78 (水 Water=1)
溶解度 Solubility in Water : 不溶. Insoluble.
閃點 Flash Point : -1 °C (閉杯 Closed Cup)
自燃點 Auto-ignition : 291 °C
燃燒上下限 Low / Upper Flammable limits : 1.7 – 10 %
pH value : —
嗅覺閾值 Odor threshold : 2-85 ppm(偵測 Detect)、13.3-75 ppm(覺察 Sense)
易燃性(固體、氣體) Flammability(solid,gas) : -
分解溫度 Decomposition temperature : —
蒸氣壓 Vapor pressure : 37.62 mmHg (20°C)
蒸氣密度 Vapor density : 3.22 (空氣 Air=1)
辛醇/水分配係數 Partition coefficient(n-octanol/water,log Kow) : 0.29-0.73
揮發速率 Evaporation rate : - (乙酸丁酯 Butyl Acetate=1)

X. 安定性及反應性 Stability and Reactivity

安定性 Stability : 安定. Stable.
特殊狀況可能之危害反應 Possible hazardous reactions under specific conditions : 1. 靜電. 2. 火花. 3. 明火. 4. 其他引火源. 5. 強氧化劑(如過氧化物, 硝酸鹽或過氯酸鹽): 會增高起火及爆炸的危險性. 1. Static electricity. 2. Spark. 3. Fire. 4. Other flammable material. 5. Strong oxidant (Ex: peroxide, nitrate, perchlorate can increase the opportunity of fire and explode.
應避免之狀況 Conditions to Avoid : 遠離火源. Keep away from flame.
應避免之物質 Incompatibility : 氧化劑. Oxidizing agents.
危害分解物 Hazardous Decomposition Products : 熱分解時會產生可燃有毒的氣體. Formation of combustible and noxious fumes during thermal decomposition.

XI. 毒性資料 Toxicological Information

• 丁酮 Methyl Ethyl Ketone : 毒性資料 Toxicity data : LC50 inhalation-rat 11300ppm/4H ; 11300 ppm /4H(大鼠, 吸入) LD50 oral-rat 2740 mg/kg ; 2740 mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system. (中樞神經系統)
• 乙酸乙酯 Ethyl Acetate : 毒性資料 Toxicity data : LC50 inhalation-rat 16000 ppm/6H ; 16000 ppm /6H(大鼠, 吸入) LD50 oral-rat 5600 mg/kg 5600mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system . (中樞神經系統)
• 甲基環己烷 Methyl Cyclohexane : 毒性資料 Toxicity data : LC50 inhalation-rat 20750ppm/4H ; 20750 ppm /4H(大鼠, 吸入) LD50 oral-rat 2250 mg/kg ; 2250 mg/kg(大鼠, 吞食) 傷害器官 Target organs : Central nervous system. (中樞神經系統)
暴露途徑 Routes of exposure: 吸入、皮膚接觸、眼睛接觸、食入. Breath, skin contact, eye contact, eats.
症狀 Symptoms: 刺激感、噁心、嘔吐、頭痛. Stimulate. Nausea. Puke. Headache.
急毒性 Acute toxicity: 皮膚: 1. 直接接觸到液體可能導致輕度皮膚刺激 吸入: 1. 毒性極低, 主要是抑制中樞神經, 會導致頭昏眼花及噁心. 2. 高濃度可導致意識喪失. 3. 蒸氣可會刺



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<p>激鼻子和喉嚨。</p> <p>食入:1.會導致喉嚨痛、噁心及腹瀉。2.嘔吐時可能會吸入肺部造成嚴重肺刺激、損壞肺組織或死亡。</p> <p>眼睛:1.300ppm 蒸氣會刺激眼睛 2.液體濺到眼睛也會刺激</p> <p>Skin: Directly contact the liquid would lead to the imponderability skin allergy.</p> <p>Breath: 1.lower poison and it mainly effects on central nervous system, will lead to dizziness and nausea. 2. High concentration steam will lead to lose the mind. 3. The steam will stimulate nose and throat.</p> <p>Eat: 1. It will lead to throat pain, nausea, and diarrhea. 2. People might inhale it into lungs when vomiting and it will cause serious damage on lungs or even death.</p> <p>Eye: 1.300ppm steam will stimulate eyes. 2. The liquid also will stimulate eyes.</p>
<p>慢性或長期毒性 Chronic toxicity or long term toxicity:1.會溶解皮膚油脂，長期接觸可能導致皮膚炎</p> <p>It will dissolve the skin's oil; it leads to dermatitis in long term.</p>

XII. 環境資料 Ecological Information

<ul style="list-style-type: none"> • 丁酮 Methyl Ethyl Ketone 生態毒性資料 Ecotoxicity Data: LC50 (魚類 Fishary toxicity) : 1690-5640mg/96H (1690-5640mg/96 小時) EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : - 生物濃縮係數 (BCF) : 1 • 乙酸乙酯 Ethyl Acetate 生態毒性資料 Ecotoxicity Data: - LC50 (魚類 Fishary toxicity) : - EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : - 生物濃縮係數 (BCF) : - • 甲基環己烷 Methyl Cyclohexane 生態毒性資料 Ecotoxicity Data: LC50 (魚類 Fishary toxicity) : 5800 mg/96H (5800 mg/96 小時) EC50 (水生無脊椎動物 Aquatic invertebrates toxicity) : - 生物濃縮係數 (BCF) : 95-321 <p>環境總結 Environmental Summary: Harmful to aquatic life. (有害於水生生活)</p>
<p>持久性及降解性 Persistence and degradability : 1.具有高度的抗生物分解性。2.當釋放至水中，預期會揮發及滲入地下。3.當釋放至大氣中，預期會與氫氧自由基反應，半衰期約 52 小時。1. High bio-resistance. 2. It expects to evaporate or infiltrate in the ground when put in the water. 3. It expects to reaction with hydrogen when put in the air and its half-life is 52 hours.</p>
<p>生物蓄積性 Bioaccumulative potential: 因會很迅速代謝及排出，故不太可能蓄積。It will not accumulate because it's easy to drain out.</p>
<p>土壤中之流動性 Mobility in soil : 當釋放至土壤中，預期會揮發及滲入地下。It expects to evaporate or infiltrate in the ground when put in the soil.</p>
<p>其他不良反應 Other adverse effects : -</p>

XIII. 廢棄處置方法 Disposal Information

<p>廢棄處置方法 Waste disposal methods : 依聯邦, 國家或地方法規處理. Waste disposal should be in accordance with existing federal, state and local environmental regulations.</p> <p>空容器警告 Empty containers warnings : 空容器可能含有化學殘留物, 即使已倒空, 也要參照物質安全資料表 & 標籤處理. Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.</p>

XIV. 運輸資料 Transport Information

海運名稱 Dot Shipping Name	聯合國運輸編號 UN Number	危害等級 Dot Hazard Class	包裝分類 PCK GRP
易燃液體 Inflammable Liquid	1993	3	II

XV. 法規資料 Regulation Information

<p>• TSCA: 所有成分都在 TSCA 詳細目錄中. All components are on the TSCA inventory.</p>



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- 歐共體危險，安全短語 EC Risk and Safety Phrases:
 - R11：高度易燃. Highly flammable.
 - R36：刺激眼睛. Irritating to eyes.
 - R38：刺激皮膚. Irritating to skins.
 - R65：有害 Harmful: 吞食可能引起肺的損傷. may cause lung damage if swallowed.
 - R66：重複的接觸會引起皮膚乾燥或裂口. Repeated exposure may cause skin dryness or cracking.
 - R67：蒸汽可能引起睡眠或頭暈. Vapours may cause drowsiness and dizziness.
 - S09：放置於通風良好的地方. Keep container in a well ventilated place.
 - S16：遠離火源，嚴禁吸煙. Keep away from sources of ignition-No smoking.
 - S25：避免接觸到眼睛與皮膚. Avoid contact with skin and eyes.
 - S33：防止靜電. Take precautionary measures against static discharges.
 - S43：在發生火災時用沙，土，化學粉末或醇類泡沫滅火劑滅火. In case of fire use sand, earth, chemical powder or alcohol type foam.

適用法規 Applicable regulations :

1.勞工安全衛生設施規則 2.危險物與有害物標示及通識規則 3.勞工作業環境空氣中有害物容許濃度標準
 4.道路交通安全規則 5.事業廢棄物貯存清除處理方法及設施標準 6.毒性化學物質管理法 7.公共危險物品及可燃性高壓氣體設置標準暨安全管理辦法 1. The Essentials of Labors Safety and Hygiene 2. The danger and passes with the harmful indication knows the rule 3. In laborer work ambient air harmful admissible concentration standard 4. Road traffic safety precaution 5. Enterprise rejects storing elimination processing method and facility standard 6. Toxic chemical substance control law 7. Public dangerous goods and ignitable compressed gas establishment standard and safety control means

XVI. 其他資料 Other Information

資料來源 **Sources of information** : 台灣工業安全局 Taiwan industrial safety corporation.
 美國 MDL 信息系統 U.S. MDL information systems, Inc.

本資料只適用於產品本身，不適用於和其他混合使用。根據我們的研究和可靠的資料，我們認為它是精確的，但不保證它的精確性。The information given and the recommendations made herein apply to our products alone and not combined with other products. Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made.

製表單位 Compile Section	名稱 Name : 第一研發課 First section of R & D department.				
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APPLICATIONS & CHARACTERISTICS 用途及特性：

It is designed for cleaning dirt from synthetic leather, PU Foam, PU leather, leather, mid-sole, outsole, etc. Fast cleaning, easy to use, increase luster of material surface.

- ◇ 鞋面整理劑 256 係用於迅速洗淨或整理各種皮革之鞋面污染及膠糊，如塑膠鞋面、PU 合成皮鞋面之鞋型，是一種高性能強力去汙劑，本劑不損害原鞋面皮革之外觀及光澤、去除汙力強，操作簡便。

PHYSICAL PROPERTY 物性：

1. Appearance 外觀：Colorless transparent liquid 無色透明液體
2. Major Component 主要成份：Organic solvent 有機溶劑
3. Solid Content 固成份：N/A
4. Viscosity 粘度：--- (DV-II or DV2T S62/60RPM, 25°C)
5. Storage temp. 儲藏溫度：5-40□
6. Shelf Life 有效期限：6 months 6 個月
7. For solvent components, please refer to MSDS. 溶劑成分請參照 MSDS.

OPERATION METHOD 使用方法：

- 1 · Wiping to the material surface.

Ps. NIR oven drying condition is suggested to be set according to the operation of different materials, and special models.

- ◇ 用 256 擦拭材質表面。
- ◇ 乾燥條件 Drying Condition：自然乾燥 2'-5' in R.T x 2'-5'
傳統烘箱乾燥 Traditional Oven 50±5□ x 1'-3'
紅外線烘箱乾燥 NIR Oven 50±5□ x 1'-2'

備註：不同類型的烘箱，烘乾條件按實際操作而定；特殊型體依據鞋廠實際情況確定。

NOTICE 注意事項：

1. Using cotton or calico to apply 256, press the cotton on the edge of container to squeeze over-absorbed solvent, and then clean the product surface.

南寶樹脂化學工廠股份有限公司
NAN PAO RESINS CHEMICAL CO., LTD.

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2. Dipping in 256 for cleaning of CMP and IP before UV priming is proved to be feasible.
3. Keep away from fire, store in cool & dry, well-ventilated place.
4. Operator must wear PPE.
 - ◇ 棉花或棉布沾上 256，在容器的邊緣輕擠壓，再清洗成品鞋的表面。
 - ◇ 對於 CMP、IP 材料 UV 處理前的清洗，可採用本品浸泡的方式。
 - ◇ 遠離火源，並儲存於陰涼，乾燥，通風之處。
 - ◇ 操作人員須配戴 PPE 防護用具。

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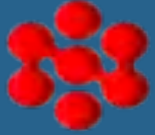
Lactae Hevea 大底之拉力及老化評估測試

Bonding & aging evaluation trial

for Lactae Hevea sole

Nanpao Tech., Nov. 2014





Background

測試目的 (Purpose):

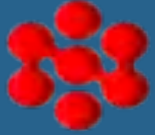
Lactae Hevea 大底之拉力及老化評估測試。

To evaluate the bonding and aging performance for Lactae Hevea sole.

測試材料 (Material collection):

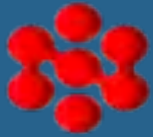
測試用之 Lactae Hevea 大底由 Reltex 提供。

Lactae Hevea sole from Reltex.



Outlines

1. 貼合流程及測試項目
(Bonding practice and test item)
2. 拉力及老化測試結果
(Bonding and aging test result)
3. 結論及建議 (Conclusion and suggestion)



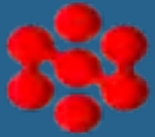
Bonding practice and test item

貼合流程 (Bonding practice) :

Process	Material	Cleaner	Drying condition	Primer	Drying condition	Cement	Drying condition	Cement	Drying condition	Attaching & pressing
1	Lactae Hevea sole (打粗, Buffed)	-	-	1015F + 2%B	56°C x 2'30"	71KN + 4%RN	56°C x 2'30"	71KN + 4%RN	56°C x 2'30"	
	實驗室橡膠試片 (RB strip)	-	-	1015F + 2%B	56°C x 2'30"	-	-	71KN + 4%RN	56°C x 2'30"	
2	Lactae Hevea sole (打粗, Buffed)	256	56°C x 2'00"	1015F + 2%B	56°C x 2'30"	71KN + 4%RN	56°C x 2'30"	71KN + 4%RN	56°C x 2'30"	
	實驗室橡膠試片 (RB strip)	-	-	1015F + 2%B	56°C x 2'30"	-	-	71KN + 4%RN	56°C x 2'30"	

測試項目 (Test item) :

- 試片拉力 (Bonding performance)
- 老化測試後之拉力確認 (Bonding check after aging test (70°C × 5 days))

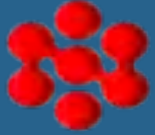


Bonding and aging test result

測試項目 (Test item)	貼合流程 (Bonding process)			
	1 (W/O cleaner 256)		2 (W/ cleaner 256)	
拉力數值 Bonding value (kgf / cm)	2,8 (Fail)	2.3 (Fail)	4.5 (Pass)	4.9 (Pass)
老化後拉力 Bonding performance after aging (kgf / cm)	-	-	5.1 (Pass)	6.0 (Pass)
Pic.				

- 流程 1 拉力不佳，僅單面有膠 (Rejected bonding result of process 1, one side cement) .
- 流程 2 增加清洗，拉力老化測試通過，雙面帶膠 (Bonding and aging test pass of process 2, cement on both side) .

註記: 拉力數值: 試片貼合後 24 小時進行拉力測試。
 Note: Bonding value: Bonding test after 24 hr) .



Conclusion and suggestion

For Lactae Hevea sole:

1. 無清洗流程: 拉力不佳且僅單面有膠。

W/O Cleaner: Poor bonding, cement on one side.

2. 流程增加 256 清洗: 拉力及老化測試通過，雙面帶膠。

W/ Cleaner 256: Bonding and aging test pass, cement on both side.

Suggestion:

建議增加清洗流程以符合拉力標準。

Recommend to implement the cleaning process for the bonding concern.