台南市新化區某公司火警事故

Fire incident at company in Xinhua District, Tainan

一、摘要

100 年 7 月 28 日，新力美科技股份有限公司新化廠製三課製程區竄出大量有機蒸氣，並迅速蔓延至鄰近廠區及周邊馬路，洩漏量到達爆炸下限且遇熱源而引起火災事故，波及鄰近製程區及品保實驗室（毒化物少量運作場所）。

關鍵詞：(1)火災、(2)爆炸下限、(3)少量運作場所

Abstract

100 July 28, at DSM- AGI Corporation, there was a leaking of organic vapor from the Zone 3 of production area and spread over to the nearby plant and the road. When the vapor cloud accumulated to the LEL level at certain area, which met the ignition source, a explosion occurred and affected the production area and QC room（small amount of toxic chemical substance handling site）.

Keywords：(1)Fire,(2)LEL,(3)a small amount operational site

嘉義縣某塑膠公司火警事故

Fire incident at plastic company in Chiayi County

一、摘要

99 年 10 月 3 日早上 8 點 20 分南亞塑膠工業股份有限公司嘉義廠發生熱媒油洩漏之火災，起火點為嘉義二廠一課二樓雙軸延伸聚丙烯膠膜機之縱向延伸設備，因火勢迅速延燒，導致整個廠房燒燬。

關鍵詞：(1)嘉義二廠、(2)熱媒油、(3)火災

Abstract

October 3 1999 8:20 am, Nan Ya Plastics Corporation Chiayi Second Plant Thermal oil spill occurred a fire, accident locations, At second floor of first section, The Machine Direct Orientation device Biaxial Orientation Polypropylene film machine . The fire quickly spread, leading to the factory burned the whole scene

Keywords：(1) Chiayi Plant, (2) Thermal oil, (3) fire

高雄市中石化小港廠火警

Fire incident at Siaogang plant of a petrochemical company in Kaohsiung

一、摘要

於民國 100 年 4 月 13 日 16 時 20 分,工場操作人員進行例行性巡視及取樣時，聽聞製程區高壓段傳出異響，並於同時間發現環己烷熱回收系統的熱交換器入口處發生火災。

火災現場在安全及可控制狀況下，工場值班主管會同南區毒災中心陳政任主任，進入火場點拍照，確定為熱交換系統入口管線上安全閥本體洩漏，立即對照安全閥資料圖，確認洩漏點為安全閥之設定螺栓口。經研討搶修處理方式後，交由檢修人員進行克漏任務，於隔日清晨完成滅火、止漏及檢修。

關鍵詞：(1)環己烷、(2)安全閥、(3)火災

Abstract

On April 13, 2011, at 16:20, a plant operator heard unusual sounds at the high voltage section of the production area while performing routine inspection and collecting samples. At the same time, a fire was found to break out at the heat exchanger inlet for the cyclohexane heat recovery system. Under the situation where safety and condition of the fire scene were under control, the plant shift supervisor, with Director Chen Zheng-ren of the Southern Center for Emergency Response of Toxic Substance, entered the scene to take photos. It was confirmed that leakage occurred to the safety valve of the heat exchange system inlet line. The situation was immediately compared with the information data drawing of the safety valve, which confirmed that the leakage point originated from

the screw of the safety valve. After the handling method was discussed, the repairmen carried out stop-leakage operations. The extinguishing of the fire, stopping of leakage and repairs were completed in the morning of the next day.

Keywords：(1) CYCLOHEXANE, (2) safety valve, (3) fire

桃園縣平鎮市某電子科技公司火警事故

Fire incident at electronics technology company in Pingzhen, Taoyuan County

一、摘要

9 年 12 月 10 日凌晨約 04 時 00 分，本公司二廠一樓上膠作業區發生爆炸，初步調查結果為廠內一廠丙酮槽處於低液位且未有原料補充，現場操作人員通知設備人員至儲槽區查看，發現控制儲槽之電磁閥損壞，於是將電磁閥拆除，並將空氣管插入氣動泵浦補料，將原本該送至一廠之丙酮原料送至二廠，導致丙酮由儲槽區持續送入二廠三樓之丙酮儲桶而造成溢流洩漏。丙酮液體隨即從二廠三樓溢流至一樓，現場人員察覺後，便趕至二廠三樓儲桶將上方輸送閥門手動關閉，然後返回一樓現場處理時，便發生丙酮爆炸，現場造成一死四傷，廠內隨即通報相關單位到場協助。現場協助處理單位有桃園縣消防局、桃園縣警察局、桃園縣環保局、台灣電力公司、環保署北區環境督察大隊、環保署北部環境毒災應變隊等單位。

關鍵詞：(1)丙酮、(2)爆炸、(3)電磁閥

Abstract

On December 10, 2010, at 04:00 before dawn, an explosion occurred at the first floor of the company's No. 2 Plant, glue coating area. Results from the preliminary investigation showed that the liquid level of the acetone tank at No. 1 Plant was low with no supplementary feeding. After the operator at the site informed the equipment personnel to inspect the tank area, it was found that the electromagnetic valve for the tank control was damaged. The electromagnetic valve was therefore removed, and an air pipeline was inserted to the pneumatic pump for raw material feeding. The raw material, acetone, originally from No. 1 Plant was transported to No 2.

Plant. This eventually caused overflow and leakage as the acetone from the tank area was continuously transported to the 3rd level of No. 2 Plant. The situation caused the acetone liquid immediately to overflow from the 3rd level to the 1st level of No. 2 Plant. After the workers at the scene knew about the situation, they rushed to the 3rd level (No. 2 Plant) and manually closed the transport valve above the tanks. After they returned to the 1st level to deal with the situation, the acetone exploded. The explosion injured 4 workers and caused 1 casualty. The Plant immediately reported to the related units for assistance. The units assisting the scene included the Taoyuan County Fire Department, Taoyuan County Police Department, Taoyuan County Environmental Protection Bureau, Taiwan Power Company, EPA's Northern Inspection Team, and the Northern Center for Emergency Response of Toxic Substance.

Keywords：(1) Acetone, (2)Explosion, (3) electromagnetic valve

桃園縣中壢市某科技公司氣爆事故

Gas explosion accident at technology company in Zhongli, Taoyuan County

一、摘要

民國 100 年 6 月 9 日約上午 11 時左右，本公司中壢廠，外包商騏大機電顧問股份有限公司，進行電線預留管工程之施工，使用噴燈作業時，不慎引燃水溝中有機溶劑氣體，火勢從廠房外側沿著水溝向內側竄起，引燃工廠後方之廢氣處理設備以及管路、遮雨棚及倉庫之保溫材，廠方人員滅火失敗後，火勢隨廢氣處理設備管路進入工廠二樓，隨著管路、遮雨棚及倉庫之保溫材延燒至倉庫，引燃倉庫存放之易燃液體並引發氣爆現象，進而波及隔壁首利得股份有限公司，所幸無人傷亡。

關鍵詞：(1)溶劑、(2)易燃液體、(3)火災

Abstract

On June 9, 2011, around 11:00, a fire occurred at the company's Zhongli factory. It was caused by the outsource company which accidently ignited the organic solvent gas within the ditch while conducting torch operations. The fire grew from the outer side of the factory toward the inner side along the ditch, which then ignited the waste gas treatment equipment and pipelines at the rear side of the factory and the thermal insulation facilities of the rain shelter and warehouse. As the factory workers failed to extinguish the fire, the fire entered the 2nd level of the factory through the pipelines of the waste gas treatment equipment, which continued to burn along the pipelines and the thermal insulation facilities of the rain shelter and warehouse, which then extended to the warehouse. The fire ignited the flammable liquids stored inside the warehouse, which

occurred with gas explosion and further affected the adjacent company, Tong Yong Cushion Tire. Fortunately there were neither injuries nor casualties.

Keywords：(1) solvent, (2) flammable liquids, (3) fire

南投縣南投市某公司三氯化磷洩漏事故

Leakage incident of phosphorus trichloride at company in Nantou City, Nantou County

林天欽*、陳德勇
有郁實業股份有限公司
南投縣南投市南崗工業區工業路 12-2 號

一、摘要

100 年 2 月 23 日下午 3 時 16 分，本公司自歐洲進口之三氯化磷貨櫃於卸貨時不慎用堆高機刺破一桶，因三氯化磷遇到空氣中之溼氣會產生鹽酸氣-- $PCl_3+3H_2O \rightarrow H_3PO_3+3HCl$ 事故現場產生大量之白色鹽酸煙霧，廠長隨即前往察看，了解情況後成立緊急應變小組進行應變作業，經通報環保局及消防隊後，本公司應變人員穿著 A 級防護衣及 C 級防護衣，以乾粉滅火器進行中和洩漏之三氯化磷，用木屑清理中和後之廢棄物，事故現場由中區毒災應變隊及環保局進行環境監測，消防局及警察局進行警戒，本事件並未造成任何人員傷亡，經秤重約有 294kg 之三氯化磷洩漏，爾後敝司將加強堆高機操作人員安全教育訓練及堆高機之防護裝置。

關鍵詞：(1)三氯化磷、(2)鹽酸氣、(3)洩漏

Abstract

On February 23, 2011, at 15:16, a barrel of the company's phosphorus trichloride cargo shipment from Europe was accidently pierced by the stacker. Because phosphorus trichloride produces hydrochloric acid gas when contact with moisture within the air (PCL3+3H2O→H3PO3+3HCL), the scene produced abundant amounts of white hydrochloric acid mist. The factory's Director immediately went to the scene. After understanding of the situation, the emergency response team was established to carry out response operations. After the situation was reported to the Nantou

Environmental Protection Bureau and Fire Department, the company's response personnel wore A-level or C-level protection clothing and used dry powder fire extinguishers to neutralize the leaking phosphorus trichloride and then using sawdust to clean the neutralized waste. The accident scene was monitored by YERIC and the Environmental Protection Bureau in regards of environmental issues while the Fire Department and Police Department maintained alert control. The incident caused no injuries or casualties. After weighing, the leakage of phosphorus trichloride was about 294kg. In the future, the company will strengthen the safety training of the workers for stacker operations and protection devices.

Keywords：(1) Phosphorus trichloride, (2) hydrochloric acid gas, (3) leaking

苗栗縣苗栗市某石化公司爆炸事故

Explosion incident at a petrochemical company in Miaoli City, Miaoli County

葉銘鈞
長春石油化學股份有限公司苗栗廠
360 苗栗市福安里福星 246 號

一、摘要

民國 100 年 5 月 31 日凌晨約 1 時 43 分，長春石油化學股份有限公司苗栗廠之聚乙烯醇四場五樓 E 列鹼化器，可能因螺旋輸送器摩擦引火，而發生爆炸火災事故，幸無人員傷亡，火勢約 1 小時受到控制，廠房災損面積約 200 平方公尺，廠區與附近區域空氣品質監測無異常。

為防止再發事件，該廠廢除使用螺旋輸送器，變更為以斜板回收散料方式設計，並加裝線上氧氣分析儀以控制氮氣流量，以確保系統內之氣體含氧量位於下限氧濃度(Limited Oxygen Concentration，LOC)以下。

關鍵詞：(1)聚乙烯醇、(2)爆炸、(3)火災

Abstract

On May 31, 2011, during the small hours at 01:43, an explosion occurred from the alkalization device located at row E on the 5th floor, No. 4 factory of the the Miaoli plant of ChangChun PetroChemical. The reason was probably caused by friction from the screw conveyor, causing fire and then explosion. Fortunately, there were no injuries or casualties, and the fire was controlled after 1 hour. The total damage of the plant was 200 square meters. No abnormal signals were detected by the air quality monitors at the plant area and nearby locations.

To prevent a similar event from happening, the plant abolished the usage of screw conveyors, and changed to an inclined board design for

recycling. In addition, an oxygen analyzer was installed to the line to control nitrogen flow. The installment was to ensure the system's oxygen content in the gas is below the limited oxygen concentration (LOC).

Keywords：(1) Polyvinyl alcohol；PVA, (2)Explosion, (3) fire

高雄市橋頭區甲基丙烯酸甲酯事故

MMA incident at Ciaotou District, Kaohsiung

高廷嘉
行政院環境保護署南部環境毒災應變隊
高雄市燕巢區大學路 1 號

一、摘要

100 年 01 月 03 日 22 時接獲高雄市政府環保局游先生通報，民眾反應高雄市橋頭區典昌路 28 號附近有不明異味自水溝發散。環保署南部環境毒災應變隊依據 4 號作業出勤，應變隊抵達後與現場消防指揮官會衍，依現場狀況研判疑似人為惡意傾倒廢液，經 GC/MS 鑑認為甲基丙烯酸甲酯 (Methyl methacrylate, MMA)，半定量濃度測值為 12.59 ppm，pH 值約為 2。經消防水沖洗後，研判現場環境無危害之虞，進行善後復原會議，後續交由環保局追蹤、處理。

此次事故為高雄市近年發生第四起相似案件，引起檢調、環保單位高度重視，調查過程中應變隊也應檢調單位要求，到場進行鑑認、檢測作業，循線追查傾倒槽車、廢液來源工廠。最終，3 名被告因任意棄置有害事業廢棄物，判決違反廢棄物清理法第四十六條第一款之非法清理廢棄物罪。

關鍵詞：(1)甲基丙烯酸甲酯、(2)不明異味、(3)槽車

Abstract

On January 3, 2011, at 22:00, Mr. Yu from the Environmental Protection Bureau of Kaohsiung City Government informed that a civilian reported of unknown odors coming from the ditch nearby No. 28, Dianchang Rd., Qiaotou Dist., Kaohsiung City. The Southern Center for Emergency Response of Toxic Substance carried out actions according to No. 4 operation. After the response team arrived to the scene, the team discussed the situation with the on-site fire extinguishing commander.

According to the site, it was likely that the odor was caused by a person(s) maliciously dumping waste liquid. After GC/MS testing, the methyl methacrylate (MMA) semi-quantitative concentration was 12.59 ppm and pH value around 2. After it was neutralized by fire-extinguishing water, the environment was evaluated of having no potential hazards. An aftermath and recovery meeting was then held, which the follow-up tracking and handling was handed over to the Environmental Protection Bureau.

The incident was the fourth similar case occurring in Kaohsiung in recent years, which received high attention by the prosecutor and environmental protection units. By request of the prosecutor, the response team went to the scene to perform inspection and examination to track the dumping tanker and wastewater factory source. Eventually, the 3 defendants were sentenced illegal waste disposal for violating Article 46, Paragraph 1 of the Waste Disposal Act for arbitrarily disposing hazardous industrial waste.

Keywords：(1) Methyl methacrylate, (2) unknown odors, (3) tanker

屏東縣某公司三氯矽甲烷洩漏事故

Leakage incident of trichlorosilane at company in Pingtung County

唐嘉鴻
福聚太陽能股份有限公司

一、摘要

屏東市某多晶矽廠三氯化矽合成反應器，於 2011 年 01 月 06 日 18 時 10 分，因反應器內之矽砂結塊，反應器本體上 HCl 管線法蘭受熱不均勻膨脹，造成法蘭墊片密封不良，發生無水鹽酸逸散。

反應器因壓力驟降系統立即自動切斷入料，廠內人員立即啟動緊急應變機制，使用消防設備及水霧系統防止鹽酸氣逸散，於 20 分鐘內將洩漏源控制，並無造成任何人員損傷。

關鍵詞：(1) 三氯化矽、(2) 三氯矽甲烷合成反應器、(3) 無水鹽酸

Abstract

Hydrogen chloride gas was leaked from a trichlorosilane synthesis reactor in the polysilicon plant in Pingtung city at 18:10 on January 6th, 2011. It was caused by the non-homogeneous heated flanges of the piping of HCl gas on the reactor. The gasket between the flanges was heated and expanded due to the metallurgic silicon was not well-fluidized in the reactor.

The feed was shut off immediately due to the pressure drop and the emergency response mechanism was activated. The fire fighting and the water spray system were activated in order to prevent the diffusion of the HCl gas and the situation was controlled within 20 minutes. No staff was hurt in this incident.

Keywords：(1) Trichlorosilane、(2) Trichlorosilane synthesis reactor、(3) Hydrogen chloride