台北市南港某研究單位溴水洩漏事故

Bromine Leakage Accident in a Research Institute in Nankang District, Taipei City

一、摘要

學術機構（化學研究所）進行溴化高壓反應實驗過程中，因管內瞬間壓力過大導致高壓管破裂，並擊中排氣櫃內純溴水，導致溴水逸散於排氣櫃內而造成實驗室工作人員受傷。事故發生後實驗室工作人員立即撤離並關閉前後門及貼上警示封條，打開對外窗及緊急逃生門進行通風，且實驗室工作人員隨即通報消防局及毒災應變隊協助後續災害處理及恢復，雖溴水不屬於國家列管毒性化學物質，但發生災害實驗室屬「毒性化學物質運作場所」，故管理單位通報政府環境保護機關，隨後環境保護稽查人員抵達現場了解現場情形。災後現場共產出 1 桶廢液及 2 桶廢棄物，皆交由國家認證合格之資源回收處理廠及事業廢棄物處理廠進行後續處理。因發生災害之學術機構除本身訂有意外事件通報程序 SOP 外並定期辦理毒性化學物質緊急應變演練，故該所實驗室能於最短時間內進行應變對策及通報各應變單位進行處理，並把災害所造成之影響及損失降至最低，且該學術機構計畫持續加強毒性化學物質緊急應變相關政策以防止類似災害再次發生。

關鍵字：(1)溴水、(2)溴化高壓反應、(3)毒性化學物質運作場所

Abstract

A high-pressure brominating reaction was taking place in a chemistry research lab at the Institute of Chemistry. The high-pressure tube ruptured and stroked the container containing pure bromine, spilling bromine all over the hood and injuring researchers. After the accident, laboratory personnel immediately evacuated, put up warning signs, and opened windows to air out the bromine. They contacted the fire department’s toxic chemical emergency

response team to aid with restoration. Even though bromine is not listed under the nation’s controlled toxic substances, the site of toxic spill would be considered handling premises of toxic chemicals and had to report to the EPB.

The site of incident produced one tank of liquid waste and two tanks of solid waste, and these were processed at nation authorized recycling processing centers.

Due to adequate response to emergency following the Standard OperationProcedure and the facility’s regular toxic chemical response drills, the laboratory responded, acted accordingly, and reported the accident to all authorities in the shortest time possible. Thus, the risk was minimized, and the facility planned to strengthen their emergency response protocol to prevent a likelihood of such reoccurrence.

Keyword：(1)bromine、(2)brominating Reaction、(3)toxic chemical substances handling sites

台北市內湖區某生技公司火警事故

Fire Accident in a Biotechnology Company in Neihu District, Taipei City

一、摘要

營業處所大樓公共區域空調冷氣機電房內配電盤設備電容器爆炸引發火災；該樓層設有實驗室，使用『二氯甲烷』，火災起火區域接近毒化物儲放地點。

關鍵字：(1)溴水、(2)溴化高壓反應、(3)毒性化學物質運作場所

Abstract

The fire was caused by explosion of capacitor in air-conditioning room. This public area is near to lab area where the toxic substances were stored, like dichloromethane, etc.

Keywords：(1) fire、(2) storage of toxic substances、(3)Dichloromethane

雲林縣麥寮工業區 LPG 公共管路火警事故

Fire Accident in LPG Pipeline in Industrial Park of Mailiao Township, Yunlin County

一、摘要

此事故發生於 100 年 5 月 12 日及 5 月 18 日，係異壬醇廠長途輸送異癸醇管路發生腐蝕洩漏遇蒸汽管路高溫表面導致火警事故，事後已將使用率低之異癸醇管線拆除。

關鍵字：(1)異癸醇

Abstract

This accident occurred May 12 and May 18,2011 the Department the the factory long distance transport.Isodecanol pipe corrosion leaks cause a fire accident in case of steam piping hot surfaces, and afterwards sent using low of Isodecanol pipeline removed.

Keywords：(1)Isodecanol

苗栗縣國道三號後龍收費站液化石油氣槽車翻覆事故

Petroleum Gas Tank Wagon Rollover Accident near Houlong Tollbooth No. 3 National Freeway in Miaoli County

一、摘要

台合通運公司之液化石油氣槽車 WG-○○○，由深澳載運液化石油氣至通霄油庫，南下行經國道三號高速公路後龍收費站前，因前方車輛臨時改變路徑駛入 ETC 車道，致本公司槽車因閃避不及，緊急煞車而打滑翻覆。

關鍵字：(1)液化石油氣

Abstract

The LPG gas tank wagon of Taiho Transportation Company, WG-○○○, transferring LPG from Shenao to Tunghsiao oil depot via National Freeway No.3 tipped over due to emergency braking after the car ahead suddenly changed to the ETC lane at the Houlong tollbooth.

Keyword：(1)LPG gas

高雄市台 88 線氯乙烯槽車翻覆事故

Vinyl Chloride Tank Wagon Rollover Accident on No.88 Provincial Highway, Kaohsiung City

李美龍
台灣氯乙烯工業股份公司 林園廠
高雄市林園區工業一路 1 號

一、摘要

輝宇通運公司之槽車，從台灣氯乙烯林園廠裝載氯乙烯，欲前往苗栗縣華夏公司頭份廠卸料，行經台 88 線大發交流道北上入口處疑因過彎時，駕駛不當、重心不穩，造成槽體翻覆，翻覆時現場並無洩漏情形，起重機吊掛扶正時，因鋼索掛鉤滑拖擠壓與撞擊槽體，造成槽體 2 處滲漏，經以高壓止漏墊片處理，止漏墊附近以光離子偵測器（PID）與火焰離子偵檢器（FID）確認無洩漏之虞，周遭環境與鄰近住宅區域也未受影響，基於安全考量下，事故槽車由警車前導，消防車與毒災應變隊押運，就近拖回台氯公司林園廠回收卸料解除危機。

關鍵字：(1)氯乙烯、(2)吊掛扶正、(3)洩漏

Abstract

The tank wagon of Huiyu Transportation Company was transferring vinyl chloride from Taiwan VCM Linyuen Plant to China General Plastics Corporation Toufen Factory via No.88 Provincial Highway. The tank wagon tipped over when passed Daihatsu Interchange. The site of incident did not show chemical leakage. However, when a derrick was used to move the wagon, the hook collided with the body of the wagon, causing two leakages. Leakages were sealed with high-pressure packing, and confirmed to be sealed with PID and FID detectors. The surrounding environment and residential areas were unaffected. Under safety precautions, the wagon was transported back to

Taiwan VCM Linyuen plantunder the guidance of police car, fire truck, and emergency response team to recycle the chemicals.

Keywords：(1)vinyl chloride、(2)centralizer and righting、(3)leakage

高雄市台 88 線氯乙烯槽車翻覆事故

Vinyl Chloride Tank Wagon Rollover Accident on No.88 Provincial Highway, Kaohsiung City

李美龍
台灣氯乙烯工業股份公司 林園廠
高雄市林園區工業一路 1 號

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Keywords：(1)vinyl chloride、(2)centralizer and righting、(3)leakage

桃園縣新屋鄉某公司化工儲槽爆炸事故

Company's Chemical Tank Explosion Accident in Xinwu Township, Taoyuan County

一、摘要

本公司桃園廠於 99 年 12 月 30 日，早上 8：30 分左右，由廣明公司，運送硝酸 50%入廠卸貨，接錯管路而產生儲槽氣爆事故。

關鍵字：(1)硝酸

Abstract

The explosion happened on 30th of December, 2010 around 8:30am when 50% of the transferred nitric acid was being unloaded. The cause of the explosion was erroneous piping setup, which led to buildup of gas.

Keywords：(1)Nitric acid

苗栗縣苗栗市某工廠氣爆事故

Gas Explosion Accident of a Chemical Company in Miaoli County, Miaoli City

一、摘要

民國 101 年 3 月 12 日，下午 2:01 分，位於苗栗縣之長春石油化學股份有限公司聚乙烯醇(PVA)六場，疑似承攬商施工不慎，造成施工區域之管線回火，引起含甲醇之精聚醋酸乙烯酯(PVAc)日用中間桶氣爆事故。

為防止再發事件，該廠對於維修作業重新檢討，要求依 PID 圖確認盲封隔離，無法水洗設施則以氮封管制；獨立動火作業區域鄰近可燃性物質時，應搭設雙層防火牆。並加強承攬管理及安全工法，預防施工時之管路誤焊或迷走電流發生，引起危害。

關鍵字：(1)爆炸、(2)聚醋酸乙烯酯

Abstract

At 2:01 on March 12th, 2012, one daily used buffer tank with PVAc gas containing methanol explosion took place at ChangChun Petro Chemical Corporation Limited’s Miaoli PVA Plant (Ⅵ), caused by construction mistake.

To prevent a reoccurrence, the factory reassesses maintenance procedure and needs to abide to PID design to confirm complete sealing of pipeline. The facility should avoid having water contact and only use nitrogen seal. When areas are using flame near combustible substances, additional fire preventions should be adopted, such as setting up more firewalls and safety precautions. These are to prevent erroneous pipeline setup or short circuit.

Keywords：(1)Explosion、(2)PVAc

台中市某公司矽甲烷洩漏事故

Silane Leakage Accident in a Technology Company in Taichung City

一、摘要

100 年 09 月 16 日 本廠氣體廠房矽甲烷 Y 型鋼瓶氣體洩漏產生自燃反應，本廠立即啟動廠內應變程序架設五道水線進行環境及鋼瓶持續灑水防護。待觀察洩漏鋼瓶僅剩餘些微殘火，將洩漏鋼瓶以接管分壓方式將矽甲烷轉置導入安全無虞鋼瓶中，供應商將洩漏鋼瓶載回並進行後續災因鑑定。本洩漏鋼瓶瓶閥壓力釋放裝置事後經拆解分析確認因人為疏失遺漏安裝破裂片。日後本廠將要求供應商加強出廠前鋼瓶洩漏偵測，並派員至供應商分裝廠進行不定時現場查核及演練，藉以提升處置加強事故應變處理經驗。

關鍵字：(1)矽甲烷、(2)Y 型鋼瓶、(3)破裂片

Abstract

On Sep 16th 2012, a silane Y-cylinder was leaked and combusted spontaneously at gas plant. Five water spray line was deployed for cylinder and surrounding quenching per emergency response procedure immediately. For cascading safety, the combustion was continued under well controlled with water spray, till the cylinder pressure was acceptable for cascading, the supplier transfer the residual gas from leaked cylinder to safe one. Afterwards, the leaked cylinder was disassembled for root cause identification at supplier plant. According to investigation report from third party, the leak was caused because of the burst disc not been installed accidentally. For prevention, a strict inspection management procedure, emergency response drill with pre alert and w/o alert and surprise audit was required and arranged into contract hereafter.

Keywords：(1)silane、(2)Y-cylinder、(3)burst disc

彰化縣鹿港鎮彰濱工業區某公司火警事故

Fire Accident in a Company in Changhau Coastal Industrial Park, Lukang Township, Changhau County

一、摘要

101 年 01 月 29 日下午 3 時 40 分左右，某公司一廠突然傳出爆炸聲，緊接著竄出黑色濃煙。值班之保全人員見狀立即撥打 119 通報消防隊。由於正值春節休假期間，廠內並無工作人員。廠長接獲通報於 4 時 10 分左右趕抵現場，隨即向消防隊救災指揮官報到，提供廠內重油、瓦斯及其它危險品、毒化物等的存放位置、數量、廠區附近環境等資訊。

彰化縣環保局、環保署中區毒災應變隊亦於接獲通報後趕抵現場，協同消防局進行救災及環境監控。工業局彰濱服務中心亦於案發第一時間派員到場協助搶救、指揮交通、圍堵消防廢水等相關事宜。

火勢持續延燒至深夜始獲得控制。該公司兩棟廠房幾近全毀，災損金額超過數千萬元。災後本公司配合消防單位進行災因鑑定，推斷災因為機械因素。本廠已於重建時將廠房之建材架構重新調整，以鋼骨水泥架構進行重建。今後本廠將針對廠區之物料存放位置、廠區緊急應變人員之編制、防災器材之數量及配置點進行重新規劃與調整。並加強人員之教育訓練，以期提昇廠內緊急事故之應變能力，避免同樣的災害再度發生。

關鍵字：(1)環境監控、(2)緊急應變

Abstract

Around 3:40 pm on January 29th, 2012, an explosion happened in company’s Plant I. Security guards called 119, reporting to the fire department. Since it was Chinese New Year vacation, there were no personnel in the factory. The supervisor of the factory arrived around 4:10 pm along with a fire department authority to provide information regarding the location and amount

of toxic chemicals, heavy oil, fuel, and other dangerous substances.

After the toxic emergency response team arrived, they aided the fire department, Environmental monitoring. The Changhua EPB and Coastal Industrial Park service center also sent a dispatch team to assist with traffic direction and other related tasks. The fire was finally under control around midnight.

The cause of the accident was determined to be machinery malfunction. The company rebuilt the main building of accident, starting from the fundamental infrastructure. They also reinforced staff's response training and safety protocols, including rearranging location of substances, training personnel for emergencies and adding precaution equipment to enhance emergency response and to prevent reoccurrence.

Keywords：(1)Environmental monitoring、(2)Emergency Response

高雄市燕巢區某化工廠輕油儲槽火警事故

Light Oil Tank Fire Accident in a Chemical Factory in Yanchao District, Kaohsiung City

一、摘要

101 年 4 月 8 日晚上 19 時 10 分，本廠內儲存精製樹脂液之 P-1 儲槽突然起火，黑煙持續從儲油槽竄出，火勢於 20 時左右獲得控制，但儲槽仍悶燒將近 3 小時，因此仍持續降溫警戒。

關鍵字：(1)儲槽、(2)控制

Abstract

At 7:10 pm on April 8th, 2012, the P-1 tank storing light oil caught on fire. Smoke continued to effuse from the tank until the fire was under control at around 8:00 pm. However, the fire continued to smolder in the tank for about three hours. The tank was being monitored until it was completed cooled down.

Keywords：(1)tank、(2)control