



		Hazop Worksheet						
<div><div>Project Company</div><div>Unit</div><div>System/Section Description</div><div>Facility</div><div>Hazardous characteristics</div></div>		<div>API Manufacturing Plant Sterling Chemical Malta Ltd</div> <div>Raw material and waste storage (External Inflammable Warehouse)</div> <div>Splitting/ Pouring/ Weighing Raw material</div> <div>raw material tank</div> <div>Flammable and Hazardous Substances</div>			<div>Session n° Date Chairman/secretary Team members</div> <div>05/11/2013 Taviani Cristiano Sgrò Giuseppe (Sterling); Topa Fabrizio (Trecon); Paci Andrea (Trecon), Bolognini Mauro (Trecon).</div>		<div>Drawings</div> <div>38-06-537 External Flammable Warehouse Plan & Section S1 & S2</div>	
Key word	Deviation	Cause	Deviation detection	Possible effects/consequences	Provided protection	Top Event identified		
More/High	Temperature substance (liquid) in the tank / drum	Ambient temperature rise due to abnormal / excessive solar radiation	None	<div>Increase volume liquid</div> <div>Increase evaporation liquid</div>	The waste and raw material's area is bounded by a roofing. The chimneys are allocated in the roofing's centre for safeguard the vapors substance escape before that it can thicken undercover.	None		
	Pressure liquid transfer from IBC or drum	sudden pipe obstruction	None	Transfer pipe breaking with spill or overflow liquid inside or outside bund containment	Spill prevention control and countermeasures with constant visual control by operator for all time loading. Spill response equipment located on site loading/unloading is inspected to ensure that all items are in place, in sufficient quantity to control a minor release, and in good condition. Used, broken, damaged, missing or inoperative items are replaced.	Top Event 7		
	Flow rate transfer from tank / drum	Error handling operator	None	Increase liquid volume into incoming tank	Weighing IBC. Put tank in quarantine area. Out off specification product procedure.	None		
	transported load	Error's valuation operator	None	Uncontrolled spill out the bund containment	Loading/unloading goods instruction operative or procedure. Training operator with driving license	Top Event 1		
Less/Low	Liquid flow rate's pouring in drum or other tank	<div>Error handling operator while pump connecting / inserting</div> <div>Transfer pump malfuction for fault</div>	None	decreased flow rate	None	None		
	Tank liquid level	<div>Tank-bottom valve leak (for wear)</div> <div>damage to storage tanks due to accidental damage to the tanks caused by bursting, splitting, rupture</div>	<div>Frequent visual inspection of the outside of the tank with visual level system</div>	Liquid Spill-in bunding containment	Empty IBC/drum has been placed on scale steel plate. This plate set down on stainless steel mesh that constitute containment basin's upper cover	Top Event 2		
	missed of the vapour recovery system	Error's operator (Missing or incorrect connection closed loop vapor recovery system)	None	Vapours escape during transfer and splitting operations	Inside the weighing chamber is provided a classic suction system	Top Event 6		
No	Missed bonding and grounding containers during transfer operations	Operator error	None	Static electricity is generated as liquid flows through pipes, valves, and filters during transfer operations. Proper bonding and grounding ensures that static electricity does not accumulate and spark. Static sparks can readily ignite the vapor-air mixtures of many flammable and combustible liquids.If not, a static electricity spark hopping between the containers (even plastic ones!) during pouring could easily ignite the vapors.	Loading/unloading goods instruction operative	None		
	Liquid flow rate's pouring in drum or other tank	<div>Error handling operator while pump connecting / inserting</div> <div>transfer pump breakdown</div>	None	None	None	None		

		Hazop Worksheet					
<i>Project Company</i>		API Manufacturing Plant Sterling Chemical Malta Ltd		<i>Session n°</i> <i>Date</i>		05/11/2013	
<i>Unit</i>		Raw material and waste storage (External Inflammable Warehouse)		<i>Chairman/secretary</i> <i>Team members</i>		Taviani Cristiano Sgrò Giuseppe (Sterling); Topa Fabrizio (Trecon); Paci Andrea (Trecon), Bolognini Mauro (Trecon).	
<i>System/Section Description</i>		Splitting/ Pouring/ Weighing Raw material		<i>Drawings</i>		38-06-537 External Flammable Warehouse Plan & Section S1 & S2	
<i>Facility</i>		raw material tank					
<i>Hazardous characteristics</i>		Flammable and Hazardous Substances					

Key word	Deviation	Cause	Deviation detection	Possible effects/consequences	Provided protection	Top Event identified
Other	Tank Dispose incorrectly on pallet, forklift and scale.	Error's valuation operator	None	Uncontrolled spill out the bund containment	Loading/unloading goods instruction operative or procedure. Training operator with driving license	Top Event 1
	Weighing error	Reading error	None	Sending to production a different raw material's quantity maybe causing out off-specification risk	None	None
		Scale is not calibrated	None		Equipment program maintenance (procedure/Operative instruction)	Top Event 3
	Incorrect assessment of target size tank	Operator error	None	Spilling/overflow liquid inside bund containment	Empty IBC/drum has been placed on scale steel plate. This plate set down on stainless steel mesh that constitute containment basin's upper coverdella vasca di contenimento	Top Event 2
	Wear/deterioration/damage pipe	Accidental event	None	Transfer pipe breaking with spill or overflow liquid inside or outside bund containment	Operative instruction:Emergency training and reaction	Top Event 7
	Error substance identification	Evaluation error of the operator for failure or unclear labeling substance	None	Sending to production a different raw material's quantity maybe causing out off-specification risk of products	Defining a step-by-step procedure for creating Legally adequate warning label-products and waste	Top Event 3
				Sending to production raw material out off specification maybe causing uncontrolled chemical reaction.		Top Event 4
				Do shipment mix incompatible Waste toghether may cause uncontrolled chemical reactions		Top Event 5