


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

Key word	Deviation	Cause	Deviation detection	Possible effects/consequences	Provided protection	Top Event identified
More/High	Temperature substance (liquid) in the IBC / drum	Ambient temperature rise due to abnormal / excessive solar radiation	None	Increase volume liquid	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
				Increase evaporation liquid		
		Pressure liquid transfer from IBC or drum	Ambient temperature rise due to abnormal / excessive solar radiation	None	Vapour escape	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.
	transported load	Error's valuation operator	None	Uncontrolled spill out bund containment	Loading/unloading goods instruction operative or procedure. Training operator with driving license	Top Event 1
No	Liquid volume	Error's operator (Tank-bottom valve lef open) Tank-bottom valve leak (for wear) damage to storage tanks due to accidental damage to the tanks caused by bursting, splitting, rupture	Frequent visual inspection of the outside of the tank with visual level system	spill in bund containment	The tank or IBC are set down on the containment system. Each containment bases has a slope of 0,1% allows which to collect the spill liquid into a closed manhole localized at the containment bases centre. Structures are to be designed for the appropriate waterproofed flooring. there is a procedure / operating instruction dedicated to the spills containment.	Top Event 2
Other	Tank Dispose incorrectly on pallet, forklift.	Evaluation error of the operator	None	Uncontrolled spill out bund containment	Loading/unloading goods instruction operative or procedure. Training operator with driving license	Top Event 1
	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			