Table 17.1: Guidelines for Risk Assessment

OCCUPANCY	REQUIRMENTS
9. FIRE AND EXPLOSION INDEX (F&EI) SYSTEM MATERIAL FACTOR (MF) **FOR PROCESS AND STORAGE HAZARD EVALUATION**	**5. TOXICITY NUMBER (Th)** i. The toxicity number (Th) is derived from the NFPA health factor Nh (NFPA 704, 325M or 49). Nh is an integer number ranging from 0 to 4. The five degrees of hazards are related to the protective equipment normally available to fire fighters. The example of Toxicity numbers are shown in **Table 17.1.e.** **6. PENALTY FACTOR (Ts)** i. The Penalty Factor (Ts) is the second toxicity parameter used to determine the TI. The Ts value is derived from the 'Threshold Limit Values (TLV)'. ii. The TLV-values are drawn up by the American Conference of Governmental Industrial Hygienists. iii. TLV represents a time weighted average (TWA) air concentration to which workers can be exposed during a normal working week without ill effects. TLV is often indicated as a TWA-value, both are the same. iv. The penalty factor is determined from the **Table 17.1.f.** **7. TOXICITY INDEX** i. The Toxicity Index is then calculated from Th and Ts plus the hazard factors of fire & Explosion Index (F&EI). The TI is found from the following formula $TI=\frac{Th+Ts\ (1+GH+SH)}{100}$ Where MF—Material Factor, GH– General Hazard, SH– Specific Hazard i. The resulting TI values are ranked into three categories. a. 1-5 **Light** b. 6-9 **Moderate** c. 10-Above **High**

Table 17.1.e.: Material Factor (MF) Example

Nh	Th
0	0
1	50
2	125
3	250
4	325

Table 17.1.f.: Material Factor (MF) Example

Threshold Limit Values (TLV)	Penalty Factor (Ts)
< 5	0
5-50	50
> 50	125