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**	**1. MATERIAL FACTOR (MF)** i. The MF is the measure of the intrinsic potential energy released by the combustion, explosion or chemical reaction of the substances restrained in the equipment under study. The MF is calculated from the Nf and Nr. Those parameters are NFPA rating expressing the flammability and reactivity of the substance respectively. ii. The flammability, or in generally, the reactivity of substances rise with the temperature. If the process condition are different from the ambient temperature, a corrective factor must be adopted defined as "Temperature Adjustment of Material Factor". An example of Material factor is shown in **Table 17.1.d.** **2. GENERAL HAZARDS (GH)** i. General process Hazards are factors that play a primary role in determining the magnitude of a loss incident. The factors are, a. Chemical Processes b. Storage, Handling, Transfer and Manufacturing c. Confinement d. Access e. Drainage f. Total General Hazards Factor are investigated as contributing hazards. **3. SPECIFIC HAZARDS (SH)** i. The specific hazards are a. Quantities of Materials Involved b. Pressure Conditions c. Toxic Materials Involved d. Explosion Potential/ Flammable Range e. Total Specific Hazards Factor that indicate existence of specific conditions as a major contributing factor in fire and explosion incidents are investigated. **4. FIRE AND EXPLOSION INDEX (F&EI)** i. The F&EI calculation is calculated by giving credit for both general and specific hazards to the materials involved. The formula used is **F&EI = MF x (1 + GH) x (1 + SH),** Where MF—Material Factor, GH– General Hazard, SH– Specific Hazard ii. The resulting F&EI values are ranked into four categories. a. 1-45 **Light Hazard.** b. 46-60 **Moderate Hazard.** c. 61-95 **High Hazard.** d. 96-above **Severe Hazard**

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

Flammability	Reactivity N_r=0	N_r=1	N_r=2	N_r=3	N_r=4
N_f = 0	1	14	24	29	40
N_f = 1	4	14	24	29	40
N_f = 2	10	14	24	29	40
N_f = 3	16	16	24	29	40
N_f = 4	21	21	24	29	40