FIRE & EXPLOSION INDEX

AREA / COUNTRY	DIVISION	LOCATION	DATE

SITE	MANUFACTURING UNIT	PROCESS UNIT

PREPARED BY:	APPROVED BY: (Superintendent)	BUILDING

REVIEWED BY: (Management)	REVIEWED BY: (Technology Center)	REVIEWED BY: (Safety & Loss Prevention)

MATERIALS IN PROCESS UNIT

STATE OF OPERATION	BASIC MATERIAL(S) FOR MATERIAL FACTOR
__ DESIGN __ START UP __ NORMAL OPERATION __ SHUTDOWN	

MATERIAL FACTOR (See Table 1 or Appendices A or B) Note requirements when unit temperature over 140 °F (60 °C)

1. General Process Hazards		Penalty Factor Range	Penalty Factor Used(1)
Base Factor		1.00	1.00
A. Exothermic Chemical Reactions		0.30 to 1.25	
B. Endothermic Processes		0.20 to 0.40	
C. Material Handling and Transfer		0.25 to 1.05	
D. Enclosed or Indoor Process Units		0.25 to 0.90	
E. Access		0.20 to 0.35	
F. Drainage and Spill Control	gal or cu.m.	0.25 to 0.50	
General Process Hazards Factor (F_1)			
2. Special Process Hazards			
Base Factor		1.00	1.00
A. Toxic Material(s)		0.20 to 0.80	
B. Sub-Atmospheric Pressure (< 500 mm Hg)		0.50	
C. Operation in or Near Flammable Range	__ Inerted __ Not Inerted		
1. Tank Farms Storage Flammable Liquids		0.50	
2. Process Upset or Purge Failure		0.30	
3. Always in Flammable Range		0.80	
D. Dust Explosion (See Table 3)		0.25 to 2.00	
F. Pressure (See Figure 2)	Operating Pressure _____ psig or kPa gauge Relief Setting _____ psig or kPa gauge		
F. Low Temperature		0.20 to 0.30	
G. Quantity of Flammable/Unstable Material:	Quantity lb or kg H_C = ____ BTU/lb or kcal/kg		
1. Liquids or Gases in Process (See Figure 3)			
2. Liquids or Gases in Storage (See Figure 4)			
3. Combustible Solids in Storage, Dust in Process (See Figure 5)			
H. Corrosion and Erosion		0.10 to 0.75	
I. Leakage – Joints and Packing		0.10 to 1.50	
J. Use of Fired Equipment (See Figure 6)			
K. Hot Oil Heat Exchange System (See Table 5)		0.15 to 1.15	
L. Rotating Equipment		0.50	
Special Process Hazards Factor (F_2)			
Process Unit Hazards Factor (F_1 x F_2) = F_3			
Fire and Explosion Index (F_3 x MF = F&EI)			

(1) For no penalty use 0.00.