

HF 가

*

Offsite consequence modeling for HF accidental release scenarios

Jeonghwan Kim, Seungho Jung*

Environmental and Safety Engineering, Ajou University

2012 HF 5 , 18 가
 1 , 4 , 2013 HF
 HF (Hydrogen Fluoride)
 가
 HF가
 HF가
 가 EPA ALOHA (Areal Locations of Hazardous
 Atmospheres), DNVGL PHAST v6.7 (Process Hazard Analysis Software Tools:
 Multicomponent option) 가 HF
 Cl₂(Chlorine) HF 가
 가 69 가
 69 HF 10t HF
 70 HF 가 HF
 ALOHA, PHAST v6.7 HF
 가 HF ALOHA, PHAST HF (4)
 (Emergency Response Planning Guidelines) HF ERPG-2
 , HF saturated liquid

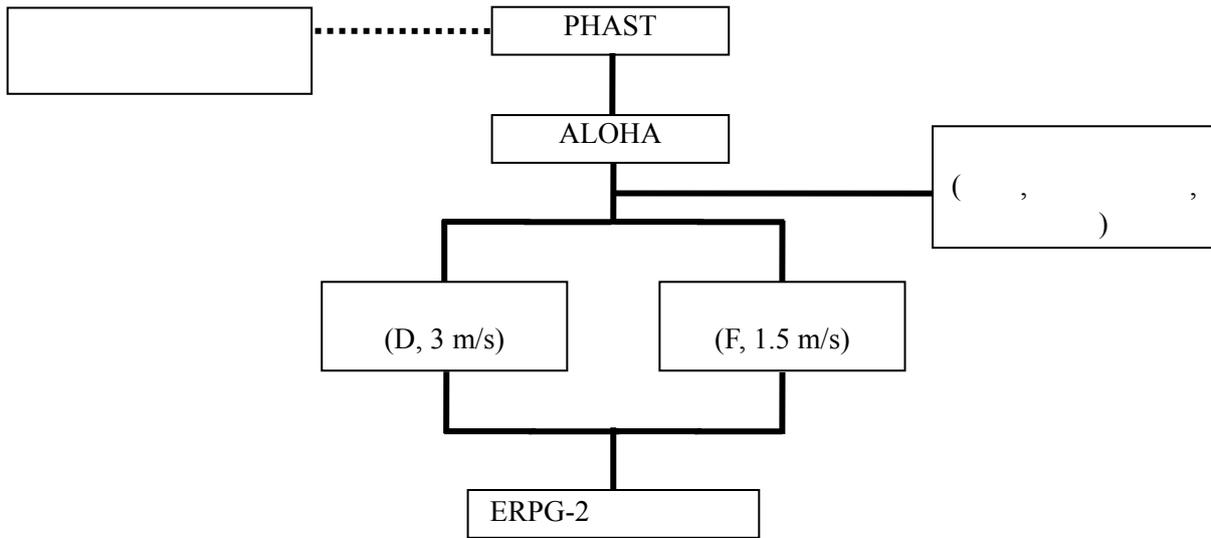


Figure 1. ERPG -2

aerosol

가

ERPG-2
ALOHA

ERPG-2

가

100%

Fig 1.

D , 3 m/s

1.5 m/s

Fig 2.

가

PHAST

, ALOHA

, 3 m/s



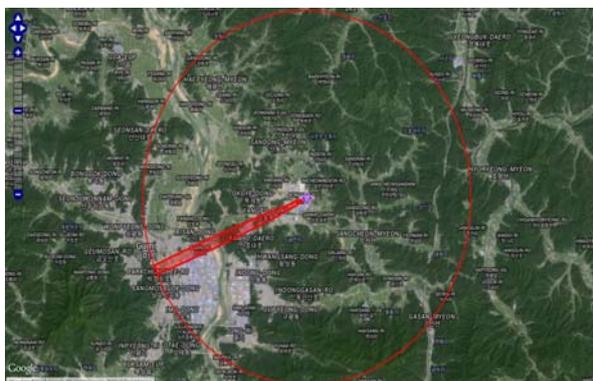
NAME	ALOHA Source Point
MARPLOT_ID	AAAAAAA000000000

Layer: ALOHA

Chemical Name: HYDROGEN FLUORIDE
Wind: 3 meters/second from ene at 10 meters

THREAT ZONE:
■ Red : 1.9 kilometers --- (20 ppm = ERPG-2)

Model: ALOHA Gaussian



NAME	ALOHA Source Point
MARPLOT_ID	AAAAAAA000000000

Layer: ALOHA

Chemical Name: HYDROGEN FLUORIDE
Wind: 1.5 meters/second from ene at 10 meters

THREAT ZONE:
■ Red : greater than 10 km --- (20 ppm = ERPG-2)

Model: ALOHA Gaussian

Figure 2.

HF

&

ALOHA ERPG -2

, 20 ton

가

HF

Fig 1.

ERPG-2

ERPG-2

Table 1.

10

100%

가

1

ERPG-2

(Table 2.)

$$R_R = Q_R/10 \quad (1)$$

R_R : (kg/minute)

Q_R : (kg) =

HF
Cl₂ 가

ERPG-2

ERPG-2

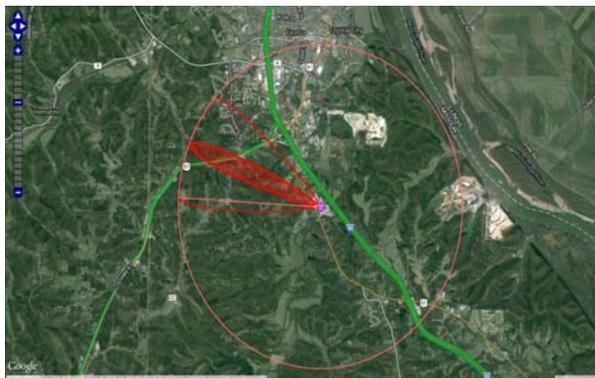
Fig.

(inch)	(kg/s)	ERPG-2 (km)	
		3 m/s, D	1.5m/s, F
2	0.97	1.4	5.6
3	2.18	2.3	8.3
5	6.05	4.4	10

Table 1. ERPG -2

(ton)	(kg/s)	ERPG-2 (km)	
		3 m/s, D	1.5 m/s, F
5	8.33	5.9	10
10	16.67	8.1	10
15	25	9.6	10
20	33.33	10	10

Table 2. ERPG -2



NAME	ALOHA Source Point
MARPLOT_ID	AAAAAAA0000000000

Layer: ALOHA

Chemical Name: CHLORINE
Wind: 3 meters/second from ese at 10 meters

THREAT ZONE:
■ Red : 4.2 kilometers --- (3 ppm = ERPG-2)

Model: ALOHA Gaussian

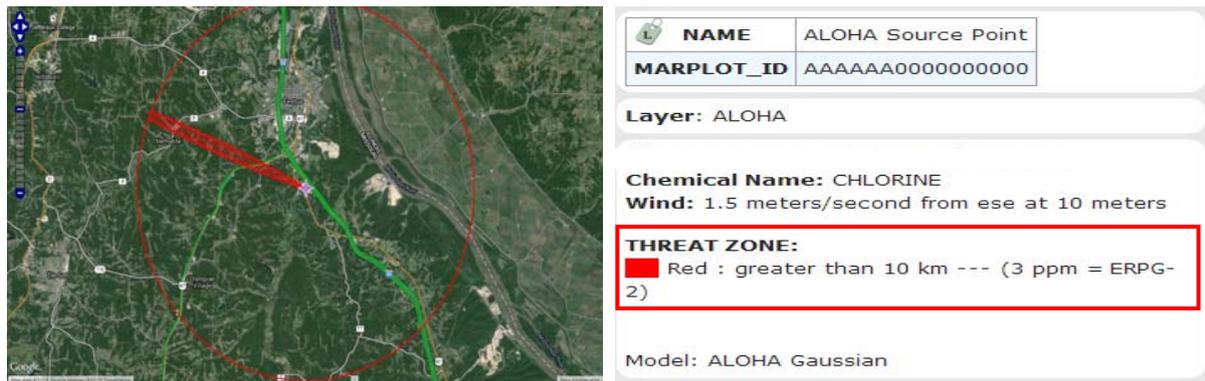


Figure 3. 가 Cl₂ & ALOHA ERPG-2 .

HF
 HF
 PHAST
 ALOHA
 ERPG-2
 HF 가
 가
 가 Cl₂ ERPG-2
 69

1. , , , . 2013;1(1):15-21. (HF)
2. , , , , et al. (, Hydrogen fluoride). 3 .473.
3. . 2014:[10]
4. , , , . 2013-05-02: 가 가 . 2013;2013():2439-709.
5. Association AIH. Emergency response planning guidelines: American Industrial Hygiene Association; 2002.
6. (NICS). . 2014.