

ภาคผนวก จ

ระยะเวลาการสะสมของไอแอมโมเนียที่รั่วออกจากช่องเปิดขนาดต่างๆ จนมีความเข้มข้น
ถึงระดับรับรู้กลิ่นได้ (25 พีพีเอ็ม) ที่ปริมาตรห้องขนาดต่างๆ

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 30 M ³ 5×2×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	4,351	2,220	1,088	272	121	68	44	30
5	3,291	1,679	823	206	91	51	33	23
10	2,624	1,339	656	164	73	41	26	18
15	2,183	1,114	546	136	61	34	22	15

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 30 M ³ 5×2×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	13,052	6,659	3,263	816	363	204	131	91
5	9,872	5,037	2,468	617	274	154	99	69
10	7,873	4,017	1,968	492	219	123	79	55
15	6,548	3,341	1,637	409	182	102	65	45

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Time for Evacuate when Ammonia concentrate from 25 ppm to 75 ppm							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	8,701	4,439	2,175	544	242	136	87	60
5	6,581	3,358	1,645	411	183	103	66	46
10	5,249	2,678	1,312	328	146	82	52	36
15	4,365	2,227	1,091	273	121	68	44	30

P _{NH3 in pipe} (P _{NH3}) psig	Evacuation time at 25 ppm. per freezer volume 30 M ³ 5×2×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	10,876	4,809	2,719	680	302	170	109	76
5	8,226	3,637	2,057	514	229	129	82	57
10	6,561	2,901	1,640	410	182	103	66	46
15	5,457	2,413	1,364	341	152	85	55	38

P _{NH3 in pipe} (P _{NH3}) psig	Evacuation time at 75 ppm. per freezer volume 75 M ³ 5×2×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	32,629	16,648	8,157	2,039	906	510	326	227
5	24,679	12,591	6,170	1,542	686	386	247	171
10	19,683	10,042	4,921	1,230	547	308	197	137
15	16,370	8,352	4,092	1,023	455	256	164	114

P _{NH3 in pipe} (P _{NH3}) psig	Time for Evacuate when Ammonia concentrate from 25 ppm. to 75 ppm.							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	21,753	11,838	5,438	1,360	604	340	218	151
5	16,453	8,954	4,113	1,028	457	257	165	114
10	13,122	7,141	3,281	820	365	205	131	91
15	10,913	5,939	2,728	682	303	171	109	76

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 120 M ³ 5×8×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	17,402	8,879	4,351	1,088	483	272	174	121
5	13,162	6,715	3,291	823	366	206	132	91
10	10,498	5,356	2,624	656	292	164	105	73
15	8,730	4,454	2,183	546	243	136	87	61

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 75 ppm. per freezer volume 120 M ³ 5×8×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	52,207	26,636	13,052	3,263	1450	816	522	363
5	39,486	20,146	9,872	2,468	1097	617	395	274
10	31,493	16,068	7,873	1,968	875	492	315	219
15	26,191	13,363	6,548	1,637	728	409	262	182

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Time for Evacuate when Ammonia concentrate from 25 ppm. to 75 ppm.							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	34,804	17,757	8,701	2,175	967	544	348	242
5	26,324	13,431	6,581	1,645	731	411	263	183
10	20,995	10,712	5,249	1,312	583	328	210	146
15	17,461	8,909	4,365	1,091	485	273	175	121

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 300 M ³ 5×20×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	43,506	22,197	10,876	2,719	1208	680	435	302
5	32,905	16,788	8,226	2,057	914	514	329	229
10	26,244	13,390	6,561	1,640	729	410	262	182
15	21,826	11,136	5,457	1,364	606	341	218	152

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 75 ppm. per freezer volume 300 M ³ 5×20×3							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	130,517	66,590	32,629	8,157	3,625	2,039	1305	906
5	98,716	50,365	24,679	6,170	2,742	1,542	987	686
10	78,733	40,170	19,683	4,921	2,187	1,230	787	547
15	65,478	33,407	16,370	4,092	1,819	1,023	655	455

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Time for Evacuate when Ammonia concentrate from 25 ppm. to 75 ppm.							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	87,011	44,393	21,753	5,438	2,417	1,360	870	604
5	65,810	33,577	16,453	4,113	1,828	1,028	658	457
10	52,488	26,780	13,122	3,281	1,458	820	525	365
15	43,652	22,271	10,913	2,728	1,213	682	437	303

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 500 M ³ 5×10×10							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	72,509	36,995	18,127	4,532	2,014	1133	725	504
5	54,842	27,981	13,711	3,428	1,523	857	548	381
10	43,740	22,317	10,935	2,734	1,215	683	437	304
15	36,377	18,560	9,094	2,274	1,010	568	364	253

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 75 ppm. per freezer volume 500 M ³ 5×10×10							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	217,528	110,984	54,382	13,595	6,042	3,399	2,175	1511
5	164,526	83,942	41,132	10,283	4,570	2,571	1,645	1143
10	131,221	66,950	32,805	8,201	3,645	2,050	1,312	911
15	109,130	55,679	27,283	6,821	3,031	1,705	1,091	758

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Time for Evacuate when Ammonia concentrate from 25 ppm. to 75 ppm.							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	145,018	73,989	36,255	9,064	4,028	2,266	1,450	1,007
5	109,684	55,961	27,421	6,855	3,047	1,714	1,097	762
10	87,481	44,633	21,870	5,468	2,430	1,367	875	608
15	72,753	37,119	18,188	4,547	2,021	1,137	728	505

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 5,000 M ³ 10×50×10							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	725,092	369,945	181,273	45,318	20,141	11,330	7,251	5,035
5	548,420	279,806	137,105	34,276	15,234	8,569	5,484	3,808
10	437,404	223,165	109,351	27,338	12,150	6,834	4,374	3,038
15	363,767	185,595	90,942	22,735	10,105	5,684	3,638	2,527

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 75 ppm. per freezer volume 5,000 M ³ 10×50×10							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	2,175,277	1,109,835	543,819	135,955	60,424	33,989	21,753	15,106
5	1,645,260	839,418	411,315	102,829	45,702	25,707	16,453	11,425
10	1,312,211	669,496	328,053	82,013	36,450	20,503	13,122	9,113
15	1,091,300	556,786	272,825	68,206	30,314	17,052	10,913	7,582

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Time for Evacuate when Ammonia concentrate from 25 ppm. to 75 ppm.							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	1,450,184	739,890	362,546	90,637	40,283	22,659	14,502	10,071
5	1,096,840	559,612	274,210	68,553	30,468	17,138	10,968	7,617
10	874,808	446,330	218,702	54,675	24,300	13,669	8,748	6,075
15	727,534	371,191	181,883	45,471	20,209	11,368	7,275	5,055

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 25 ppm. per freezer volume 10,000 M ³ 20×50×10							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	1,450,184	739,890	362,546	90,637	40,283	22,659	14,502	10,071
5	1,096,840	559,612	274,210	68,553	30,468	17,138	10,968	7,617
10	874,808	446,330	218,702	54,675	24,300	13,669	8,748	6,075
15	727,534	371,191	181,883	45,471	20,209	11,368	7,275	5,055

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Evacuation time at 75 ppm. per freezer volume 10,000 M ³ 20×50×10							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	4,350,553	2,219,670	1,087,638	271,910	120,849	67,977	43,506	30,212
5	3,290,520	1,678,837	822,630	205,658	91,403	51,414	32,905	22,851
10	2,624,423	1,338,991	656,106	164,026	72,901	41,007	26,244	18,225
15	2,182,601	1,113,572	545,650	136,413	60,628	34,103	21,826	15,164

$P_{\text{NH}_3 \text{ in pipe}} (P_{\text{NH}_3})$ psig	Time for Evacuate when Ammonia concentrate from 25 ppm. to 75 ppm.							
	0.5 mm.	0.7 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.
	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)	(min.)
0.2	2,900,369	1,479,780	725,092	181,273	80,566	45,318	29,004	20,141
5	2,193,680	1,119,225	548,420	137,105	60,936	34,276	21,937	15,234
10	1,749,615	892,661	437,404	109,351	48,600	27,338	17,496	12,150
15	1,455,067	742,381	363,767	90,942	40,419	22,735	14,551	10,109