

Safety Engineering Tables

TABLE 47-T (concluded)

Type of dust	Ignition temp of dust cloud (deg C)	Min spark energy required for ignition of dust cloud (milli-joules)	Min explosive concentration (oz per 1 000 cu ft)	Max explosion pressure (psi)	Rates of pressure rise (psi per sec)		Limiting oxygen percentage to prevent ignition of dust cloud by electric sparks
					Avg	Max	
Pitch coal tar (58% vol matter)	710	20	35	95	1 900	6 000	15
Procaine penicillin	450		25	50‡	1 000	2 000	
Rubber crude, hard	350	50	25	80	1 200	3 800	15
Secobarbital sodium	520	95	105	55	250	500	
Soap	430	60	45	85	600	1,750	
Sodium alkylarylsulfonate	540		130	75‡	400	1 250	
Sodium benzoate	560	80	55	85	1 800	10 000+	
Sodium carboxymethyl cellulose	350	560	150	60	300	600	
Sorbic acid	470	15	25	90	3 000	10 000+	
Sulfur	190	15	35	80	1 700	4,750	11
Vitamin B ₂	500	80	105	80	1 000	2 250	
Wood flour	430	20	40	110	1,600	5,500	17

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When uranium, uranium hydride, and zirconium were dispersed into air at room temperature, the dust clouds ignited under some conditions

†The oxygen reduction data in this table are based on tests made in air-CO₂ mixtures Dust clouds of thorium, titanium, uranium, zirconium Dowmetal, and certain magnesium and magnesium-alloy powders ignited in pure CO₂

‡Pressure and rates of pressure rise for these dusts were measured by an older testing technique

TABLE 47-U

NATURAL TRIGONOMETRIC FUNCTIONS

Angle	Function	Value	Angle	Function	Value	Angle	Function	Value	Angle	Function	Value
0	sin	0 0000	6	sin	0 1045	12	sin	0 2079	18	sin	0 3090
	cos	1 0000		cos	0 9945		cos	0 9781		cos	0 9511
	tan	0 0000		tan	0 1051		tan	0 2126		tan	0 3249
1	sin	0 0175	7	sin	0 1219	13	sin	0 2250	19	sin	0 3256
	cos	0 9998		cos	0 9925		cos	0 9744		cos	0 9455
	tan	0 0175		tan	0 1228		tan	0 2309		tan	0 3443
2	sin	0 0349	8	sin	0 1392	14	sin	0 2419	20	sin	0 3420
	cos	0 9994		cos	0 9903		cos	0 9703		cos	0 9397
	tan	0 0349		tan	0 1405		tan	0 2493		tan	0 3640
3	sin	0 0523	9	sin	0 1564	15	sin	0 2588	21	sin	0 3584
	cos	0 9986		cos	0 9877		cos	0 9659		cos	0 9336
	tan	0 0524		tan	0 1584		tan	0 2679		tan	0 3839
4	sin	0 0698	10	sin	0 1736	16	sin	0 2756	22	sin	0 3746
	cos	0 9976		cos	0 9848		cos	0 9613		cos	0 9272
	tan	0 0699		tan	0 1763		tan	0 2867		tan	0 4040
5	sin	0 0872	11	sin	0 1908	17	sin	0 2924	23	sin	0 3907
	cos	0 9962		cos	0 9816		cos	0 9563		cos	0 9205
	tan	0 0875		tan	0 1944		tan	0 3057		tan	0 4245