APPENDIX F : TABLEAUX DES GAZ DANGEREUX

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The following pages contain excerpts from the National Fire Protection Association (NFPA) publication NFPA 497M *Classification of Gases, Vapours, and Dusts for Electrical Equipment in Hazardous (Classified) Locations 1994 Edition.* The list includes the ignition temperatures and group classifications for Class I gases. Class II dusts and Class III fibers and flyings are not listed.

Note that considerable skill and judgment must be applied when deciding to what degree an area contains hazardous concentrations of vapours, combustible dusts, or easily ignitable fibers and flyings. Many factors—such as temperature, barometric pressure, quantity of release, humidity, ventilation, and distance from the vapour source—must be considered. When information on every factor concerned is properly evaluated, a consistent classification of the selection and location of electrical equipment can be developed.

For the most current list of properties of flammable liquids, gases, and solids, see the latest edition of NFPA 497M, *Classification of Gases, Vapours, and Dusts for Electrical Equipment in Hazardous (Classified) Locations.*

Table F.1 Group Classification and Autoignition Temperature (AIT) of Selected Flammable Gases and Vapours

MATERIAL	GROUP	°F	°C
Acetaldehyde	C*	347	175
Acetic acid	D*	867	464
Acetic anhydride	D	600	316
Acetone	D*	869	465
Acetone cyanohydrin	D	1270	688
Acetonitrile	D	975	524
Actylene	A*	581	305
Acrolein (inhibited)	B*	455	235
Acrylic acid	D	820	438
Acrylonitrile	D*	898	481
Allyl alcohol	C*	713	378
Allyl chloride	D	905	485
Ammonia	D*	928	498
n-Amyl acetate	D	680	360
Aniline	D	1139	615
Benzene	D*	928	498
Benzyl chloride	D	1085	585
1,3-Butadiene	B*	788	420
Butane	D*	550	288
1-Butanol	D*	650	343
2-Butanol	D*	761	405
n-Butyl acetate	D*	790	421
iso-Butyl acetate	D*	790	421
n-Butyl acrylate (inhibited)	D	559	293
Butylamine	D	594	312
Butylene	D	725	385
n-Butyraldehyde	C*	425	218

* Material has been classified by test.

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Table F.1 Group Classification and Autoignition Temperature (AIT) of Selected Flammable Gases and Vapours

MATERIAL	GROUP	°F	°C
n-Butyric acid	D	830	443
Carbon monoxide	C*	1128	609
Chlorobenzene	D	1099	593
Cresol	D	1038-1110	559-599
Crotonaldehyde	C*	450	232
Cumene	D	795	424
Cyclohexane	D	473	245
Cyclohexene	D	471	244
Cyclohexanol	D	572	300
Cyclohexanone	D	473	245
Cyclopropane	D*	938	503
p-Cymene	D	817	436
n-Decanol	D	550	288
Decene	D	455	235
Diacetone alcohol	D	1118	603
o-Dichlorobenzene	D	1198	647
1.1-Dichloroethane	D	820	438
1.2-Dichloroethylene	D	860	460
Dicyclopentadiene	C	937	503
Diethyl benzene	D	743-842	395-450
Diethylene glycol monobutyl ether	C	442	228
Diethylene glycol monomethyl ether	C	465	241
Diethylamine	C*	594	312
Diethyl ether	C*	320	160
N-N-Dimethyl aniline	C	700	371
Di-isobutylene	D*	736	391
Di-isobutyl ketone	D	745	396
Di-isopropylamine	C	600	316
Dimethylamine	C	752	400
Dimethyl formamide	D	833	455
Dimethyl sulfate	D	370	188
1.4-Dioxane	C	356	180
Dipentene	D	458	237
Di-N-propylamine	C	570	299
Dodecene	D	491	255
Epichlorohydrin	C*	772	411
Ethane	D*	882	472
Ethanol	D*	685	363
Ethyl acetate	D*	800	427
Ethyl acrylate (inhibited)	D*	702	372
Ethylamine	D*	725	385
Ethyl benzene	D	810	432

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Table F.1 Group Classification and Autoignition Temperature (AIT) of Selected Flammable Gases and Vapours

MATERIAL	GROUP	°F	°C
Ethyl chloride	D	966	519
Ethylene	C*	842	450
Ethylene chlorohydrin	D	797	425
Ethylene glycol monobutyl ether	C	460	238
Ethylene glycol monobutyl ether acetate	C	645	340
Ethylenediamine	D*	725	385
Ethylene dichloride	D*	775	413
Ethylene glycol monoethyl ether	C	455	235
Ethylene glycol monoethyl ether acetate	C	715	379
Ethylene glycol monomethyl ether	D	545	285
Ethylenimine	C*	608	320
Ethylene oxide	B*	804	429
Ethyl formate	D	851	455
2-Ethylhexaldehyde	C	375	191
2-Ethyl hexanol	D	448	231
2-Ethyl hexyl acrylate	D	485	252
Ethyl mercaptan	C*	572	300
Formaldehyde (gas)	B	795	429
Formic acid (90%)	D	813	434
Fuel oils	D	410-765	210-407
Furfural	C	600	316
Furfuryl alcohol	C	915	490
Gasoline	D*	536-880	280-471
Heptane	D*	399	204
Heptene	D	500	260
Hexane	D*	437	225
2-Hexanone	D	795	424
Hexene	D	473	245
Hydrazine	C	74-518	23-270
Hydrogen	B*	968	520
Hydrogen cyanide	C*	1000	538
Hydrogen sulfide	C*	500	260
Isoamyl acetate	D	680	260
Isobutyl acrylate	D	800	427
Isobutyraldehyde	C	385	196
Isophorone	D	860	260
Isoprene	D*	428	220
Isopropyl acetate	D	860	460
Isoamyl alcohol	D	662	350
Isopropylamine	D	756	402
Isopropyl ether	D*	830	443
Iso-octyl aldehyde	C	387	197

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Table F.1 Group Classification and Autoignition Temperature (AIT) of Selected Flammable Gases and Vapours

MATERIAL	GROUP	°F	°C
Kerosene	D	410	210
Liquefied petroleum gas	D	761-842	405-450
Mesityl oxide	D*	652	344
Methane	D*	999	630
Methanol	D*	725	385
Methyl acetate	D	850	454
Methyl acrylate	D	875	468
Methylamine	D	806	430
Methyl n-amyl ketone	D	740	393
Methylcyclohexane	D	482	250
Methylcyclohexanol	D	565	296
Methyl ether	C*	662	350
Methyl ethyl ketone	D*	759	404
Methyl formal	C*	460	238
Methyl formate	D	840	449
Methyl isobutyl ketone	D*	840	449
Methyl isocyanate	D	994	534
Methyl methacrylate	D	792	422
2-Methyl-1-propanol	D*	780	416
2-Methyl-2-propanol	D*	892	478
alpha-Methyl styrene	D	1066	574
Monoethanolamine	D	770	410
Monoisopropanolamine	D	705	374
Monomethyl aniline	C	900	482
Monomethyl hydrazine	C	382	194
Morpholine	C*	590	310
Naphtha (coal tar)	D	531	277
Nitrobenzene	D	900	482
Nitroethane	C	778	414
Nitromethane	C	785	418
1-Nitropropane	C	789	421
2-Nitropropane	C*	802	428
Nonane	D	401	205
Octane	D*	403	206
Octene	D	446	230
Pentane	D*	470	243
1-Pentanol	D*	572	300
2-Pentanone	D	846	452
1-Pentene	D	527	275
Propane	D*	842	450
1-Propanol	D*	775	413
2-Propanol	D*	750	399

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Table F.1 Group Classification and Autoignition Temperature (AIT) of Selected Flammable Gases and Vapours

MATERIAL	GROUP	°F	°C
Propionaldehyde	C	405	207
Propionic acid	D	870	466
Propionic anhydride	D	545	285
n-Propyl acetate	D	842	450
Propylene	D*	851	455
Propylene dichloride	D*	1035	557
Propylene oxide	B*	840	449
n-Propyl ether	C	419	215
Propyl nitrate	B*	347	175
Pyridine	D*	900	482
Styrene	D*	914	490
Tetrahydrofuran	C*	610	321
Tetrahydronaphthalene	D	725	385
Toluene	D*	896	480
Turpentine	D	488	253
Unsymmetrical dimethyl hydrazine (UDMH)	C*	480	249
Valeraldehyde	C	432	222
Vinyl acetate	D*	756	402
Vinyl chloride	D*	882	472
Vinylidene chloride	D	1058	570
Vinyl toluene	D	921	494
Xylenes	D*	867-984	464-529

* Material has been classified by test.