

SUBDIVISION OF GASES AND THEIR CLASSIFICATION RELATIVE TO IGNITION TEMPERATURE

Following tables list gases which are subdivided by hazardous area classification according to ignition temperature and temperature class.

The group classifications in parentheses are North American classifications.

Group I has no equivalent in North America.

**Group I
METHANE (Mines)**

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

HYDROCARBONS

<i>Alkanes</i>	<i>Ignition Temperature (°C)</i>	<i>Temperature Class</i>
Butane	365	T2
Cyclobutane	–	–
Cycloheptane	–	–
Cyclohexane	259	T3
Cyclopentane	380	T2
Decahydronaphthalene	250	T3
Decane	205	T3
Ethane	515	T1
Ethyl cyclobutane	210	T3
Ethyl cyclohexane	260	T3
Ethyl cyclopentane	260	T3
Heptane	215	T3
Hexane	233	T3
Methane	538	T1
Methyl cyclobutane	–	–
Methyl cyclohexane	265	T3
Methyl cyclopentane	–	–
Nonane	205	T3
Octane	210	T3
Pentane	285	T3
Propane	466	T1

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

HYDROCARBONS

<i>Alk e n e s</i>	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Propylene	410	T2
<i>Aromatic hydrocarbons</i>		
Methyl styrene	–	–
Styrene	490	T1
<i>Benzenoids</i>		
Benzene	560	T1
Cumene	420	T2
Cymene	435	T2
Ethylbenzene	430	T2
Naphthalene	528	T1
Toluene	535	T1
Trimethylbenzene	470	T1
Xylene	465	T1
<i>Hydrocarbon mixtures</i>		
Benzene (motors)	–	–
Combustible oil	250	T3
Diesel oil	330	T2
Kerosene	210 - 350	T3 - T2
Methane (industrial)	–	T1
Naphtha (from carbon)	272	T3
Naphtha (from petrol.)	290	T3
Naphtha solvent	232	T3
Petroleum (including gasoline)	250	T3
Terabenzene	–	T3

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

OXYGEN COMPOSITIONS

<i>Oxides (including esters)</i>	<i>Ignition Temperature (°C)</i>	<i>Temperature Class</i>
Carbon monoxide	605	T1
Dipropylether	–	–
<i>Alcohols & Phenols</i>		
Butanol	340	T2
Cresol	555	T1
Cyclohexanol	300	T3
Diacetone alcohol	600	T1
Ethanol	423	T2
Heptanol	–	–
Hexanol	–	–
Mathanol	455	T1
Methyl cyclohexanol	295	T3
Nonanol	–	–
Octanol	–	–
Pentanol	300	T3
Phenol	606	T1
Propanol	371	T2
<i>Aldehydes</i>		
Acetaldehyde	143	T4
Methaldehyde	–	–
<i>Alkanes</i>		
Acetic acid	427	T2

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

OXYGEN COMPOSITIONS

<i>Ketones</i>	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Acetalacetone	340	T2
Acetone	353	T1
Amyl methyl ketone	533	T1
Butyl methyl ketone	530	T1
Cyclohexanone	419	T2
Ethyl methyl ketone	505	T1
Propyl methyl ketone	505	T1
<i>Esters</i>		
Amyl acetate	380	T2
Butyl acetate	370	T2
Ethyl acetate	427	T2
Ethyl acetyl acetate	295	T3
Ethyl formate	440	T2
Ethyl methyl acrylate	-	-
Methyl acetate	475	T2
Methyl formate	449	T2
Methyl methyl acrylate	421	T2
Propyl acetate	430	T2
Vinyl acetate	385	T3

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

HALOGEN COMPOSITIONS

<i>With Oxygen</i>	<i>Ignition Temperature (°C)</i>	<i>Temperature Class</i>
Acetylchloride	390	T2
Chloroethanol	413	T2
 <i>Without Oxygen</i> 		
Allyl choride	392	T2
Benzotrifluoride	–	–
Benzyl chloride	585	T1
Bromobutane	265	T3
Bromoethane	511	T1
Chlorobenzene	637	T1
Chlorobutane	460	T1
Chloroethane	410	T2
Chloethylene (vinyl chloride)	472	T1
Chloromethane	625	T1
Chloropropane	520	T1
Dichlorobenzene	640	T1
Dichloroethane	413	T2
Dichloroethylene	460	T1
Dichloropropane	557	T1
Methylene chloride	458	T1

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

SULPHUR COMPOSITIONS

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Ethyl mercaptan	299	T3
Propyl mercaptan	–	–
Tetrahydrothiophene	–	–
Tiophene	–	–

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

NITROGEN COMPOSITIONS

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Acetonitrile	–	–
Ammonia	630	T1
Ethyl nitrile	–	–
Nitroethane	410	T2
Nitromethane	412	T2

**Group II, A (Class I, Group D)
Representative Gas - PROPANE**

NITROGEN COMPOSITIONS

<i>Amines</i>	<i>Ignition Temperature (°C)</i>	Temperature Class
Amphetamine	-	-
Aniline	538	T1
Butylamine	312	T2
Cyclohexylamine	293	T3
Diaminoethane	385	T2
Diethylamine	312	T2
Diethylaminoethanol	-	-
Dimethylamine	400	T2
Dimethylaniline	371	T2
Methylamine	430	T2
Monoethylamine	-	-
Pyridine	482	T1
Propylamine	320	T2
Toluidine	482	T1
Triethylamine	-	-
Trimethylamine	190	T4

**Group II, B (Class I, Group C)
Representative Gas - ETHYLENE**

HYDROCARBONS

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Allylene (propin)	–	–
Butadine	430	T2
Cyclopropane	498	T1
Ethylene	425	T2

**Group II, B (Class I, Group C)
Representative Gas - ETHYLENE**

NITROGEN COMPOSITIONS

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Acrylonitrile	481	T1
Hydrocyanic acid	535	T1
Isopropylnitrate	175	T4

**Group II, B (Class I, Group C)
Representative Gas - ETHYLENE**

OXYGEN COMPOSITIONS

	<i>Ignition Temperature (°C)</i>	<i>Temperature Class</i>
Acrolein	278	T3
Butyl ester of acid	–	–
Butyl ether	185	T4
Crotonaldehyde	232	T3
Dioxane	379	T2
Dioxolane	–	–
Epoxypropane	430	T2
Ethyl acrylate	–	–
Ethyl ether	170	T4
Ethyl methyl ether	190	T4
Ethylene oxide	430	T2
Furan	–	–
Hydroacetic	–	–
Methyl acrylate	–	–
Methyl ether	190	T4
Tetrahydrofuran	224	T3
Tetrahydrofurfuryl alcohol	282	T3
Trioxane	414	T2

**Group II, B (Class I, Group C)
Representative Gas - ETHYLENE**

MIXTURES

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
City gas	560	T1
Coke oven gas	–	–

**Group II, B (Class I, Group C)
Representative Gas - ETHYLENE**

HALOGEN COMPOSITIONS

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Epichlorodine (propane, 1 chloro, 2, 3 epoxy)	–	–
Tetrafluoroethylene	–	–

**Group II, B (Class I, Group C)
Representative Gas - ETHYLENE**

SULPHUR COMPOSITIONS

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Sulphurous hydrogen	260	T3

**Group II, C (Class I, Group A or B)
Representative Gas - HYDROGEN**

	<i>Ignition Temperature (*C)</i>	<i>Temperature Class</i>
Acetylene	300	T3
Carbon disulphide	102	T5
Ethyl nitrate	–	T6
Hydrogen	560	T1
Water gas	600	T1