



Equipment Group (Table 1)

<b>I</b>	Electrical equipment intended for use in mines susceptible to firedamp
<b>II</b>	Electrical equipment intended for use in places with an explosive gas atmosphere other than mines susceptible to firedamp
<b>III</b>	Electrical equipment intended for use in places with an explosive dust atmosphere other than mines susceptible to firedamp

Category (Table 2)

ATEX Cat.	Typical Zone Suitability
1G 1D	Equip. suitable for zone 0 Equip. suitable for zone 20
2G 2D	Equip. suitable for zone 1 Equip. suitable for zone 21
3G 3D	Equip. suitable for zone 2 Equip. suitable for zone 22

Types of Protection (Table 3)

GAS	ATEX	Standard
General Requirements	-	EN 60079-0
Intrinsic Safety	Ex ia & ib*	EN 60079-11
Increased Safety	Ex e	EN 60079-7
Flameproof	Ex d	EN 60079-1
Pressurization	Ex p	EN 60079-2
Powder Filling	Ex q	EN 60079-5
Encapsulation	Ex ma & mb	EN 60079-18
Oil Immersion	Ex o	EN 60079-6
Type n	Ex n	EN 60079-15

Gas group (Table 4-1)

<b>IIA</b>	Propane
<b>IIB</b>	Ethylene
<b>IIC</b>	Hydrogen/Acetylene

Dust group (Table 4-2)

<b>IIIA</b>	Combustible Flying
<b>IIIB</b>	None - conductive dust
<b>IIIC</b>	Conductive dust

### Temperature (Table 5-1)

Class of electrical component	Maximum surface temperature of	Ignition temperature of gas or vapor
T1	300 < - < 450	> 450
T2	200 < - < 300	>300
T3	135 < - < 200	>200
T4	100 < - < 135	>135
T5	85 < - < 100	>100
T6	< 85	>85

### Explosive characteristics of some products (Table 5-2)

Substance	Ignition temp. (°c)	Temp. class	Gas group
Acetone CH <sub>3</sub> COCH <sub>3</sub> (2-propanone)	540	T1	IIA
Acetylene C <sub>2</sub> H <sub>2</sub> (ethane)	305	T2	IIC
Acetic anhydride (CH <sub>3</sub> CO) <sub>2</sub> O	330	T2	IIA
Benzene C <sub>6</sub> H <sub>6</sub>	555	T1	IIA
Butane C <sub>4</sub> H <sub>10</sub>	365	T2	IIA
n-Butyl alcohol C <sub>4</sub> H <sub>9</sub> (1-butanol)	340	T2	IIA
Benzene chloride C <sub>6</sub> H <sub>5</sub> CL	590	T1	IIA
Ethanol C <sub>2</sub> H <sub>5</sub> OH (ethyl alcohol)	425	T2	IIA
Ethyl acetate CH <sub>3</sub> COOC <sub>2</sub> H <sub>5</sub> 460	460	T1	IIA
Methanol CH <sub>3</sub> OH (methyl alcohol)	455	T1	IIA
Nitrobenzene C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	430	T1	IIA
n-pentane C <sub>5</sub> H <sub>12</sub>	285	T3	IIA
Propane C <sub>3</sub> H <sub>8</sub>	470	T1	IIA
Toluene C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	535	T1	IIA
Hydrogen H <sub>2</sub>	560	T1	IIC
Carbon disulphide CS <sub>2</sub>	102	T5	IIC
Hydrogen sulphide H <sub>2</sub> S	270	T3	IIB

Note: There is no relationship between gas group and temperature class. For example, hydrogen belongs to the most dangerous gas group IIC with the lowest ignition energy, but is in the safest temperature class T1 for ignition temperatures above 450°C.