

Technical Data of Explosion Proof

Classification by Group

Explosion proof equipment is classified as below depending on the risk characteristic of explosive gas.

| EXPLOSION GROUP FLAMMABLE | FLAMMABLE SUBSTANCE | FLAMMABILITY |
|------------------------------|---|--------------|
| I | Methane | |
| II A | Acetone, Petrol, Methanol, Propane, Toluene | Low |
| II B | Ethylene, City gas | High |
| II C | Hydrogen, Acetylene, Carbon sulphide | Very High |



Warning/
Signal/
Stackable



Signal &
Electric Horn/
Speakers



Vessels and
Heavy-Duty
Equipment



Explosion
Proof



Warning
Light Bar



Aviation
Obstruction
Lights



Signal Tower
Lights



USB/ETN
Signal Tower
Lights



Electric Horn/
Speakers



Industrial
LED Lights

Temperature Class Definition

The temperature class is defined as below depending on the surface temperature of the explosion proof equipment.

| The range of Max imum surface temperature per temperature class | |
|---|-------------------|
| The range of Max imum surface temperature | temperature class |
| 300°C - 450°C | T1 |
| 200°C - 300°C | T2 |
| 135°C - 200°C | T3 |
| 100°C - 135°C | T4 |
| 85°C - 100°C | T5 |
| Below 85°C | T6 |

The Ignition Class and Temperature of The Explosive Gas

- 1) If the temperature class gets higher from T1 to T6, the ignition temperature gets lower.
- 2) If the explosion group changes from I to IIC, the explosion gets bigger.

| | T1(G1) | T2(G2) | T3(G3) | T4(G4) | T5(G5) | T6(G6) |
|------|---|--|--|-----------------------------|--------|-------------------|
| I | Methane | | | | | |
| II A | Acetone, Ethane Ethyl ethanoate Ammonia Benzol(Pure) Ethanoic acid Carbon oxide Methane, Methanol Propane, Toluene Acetic acid Ethyl acetate Ethyl chloride Carbon Monoxide Methylene Chloride Naphthalene, Phenol | Ethanol i-Amyl acetate n-Butane n-Butyl alcohol Ethyl alcohol Cyclohexane Acetic anhydride | Benzene Diesel fuel Aircraft fuel Heating oils n-Hexane Petroleum spirit - Gen Jet propulsion fuel Heating fuel DIN 51603 | Acetaldehyde Ethyl ether | | |
| II B | Town gas Coal gas (lighting gas) | Ethylene Ethylene oxide | Ethylene Ethylene oxide | Ethyl ether | | |
| II C | Hydrogen | Ethine(Acetylene) | | | | Carbon disulphide |

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The Temperature Classification

The temperature classification is based on the Maximum surface temperature of equipment.

| The range of Maximum surface temperature per temperature class | | | |
|--|-------------------|--|-------------------|
| IEC/ EN/ NEC505 | | NEC500 | |
| The range of Maximum surface temperature | Temperature class | The range of Maximum surface temperature | Temperature class |
| 300°C - 450°C | T1 | 300°C - 450°C | T1 |
| 200°C - 300°C | T2 | 280°C - 300°C | T2 |
| | | 260°C - 280°C | T2A |
| | | 230°C - 260°C | T2B |
| | | 215°C - 230°C | T2C |
| | | 200°C - 215°C | T2D |
| 135°C - 200°C | T3 | 180°C - 200°C | T3 |
| | | 165°C - 180°C | T3A |
| | | 160°C - 165°C | T3B |
| | | 135°C - 160°C | T3C |
| 100°C - 135°C | T4 | 120°C - 135°C | T4 |
| | | 100°C - 120°C | TA |
| 85°C - 100°C | T5 | 85°C - 100°C | T5 |
| Below 85°C | T6 | Below 85°C | T6 |



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Classification by Group According to NEC500

Classification of flammable material according to NEC500.

| CLASS/ GROUP | | GAS |
|--------------|---------|---|
| CLASS 1 | GROUP A | Acetylene or Equal |
| | GROUP B | Hydrogen, Butadiene, Ethylene oxide, Propylene oxide, Acrolein |
| | GROUP C | Ethyl ether, Ethylene, Acetaldehyde, Allyl alcohol, N-Butyraldehyde, Carbon monoxide, Crontonaldehyde, Cyclopropane, Diethyl ether, Diethylamine, Epichlorohydrin, Ethylene, Ethylenimine, Hydrogen Sulfide, Morpholine, 2-Nitropropane tetrahydrofuran, Isoprene or Unsymmetrical dimethylhydrazine(UDMH) |
| | GROUP D | Acetic acid (glacial), Acetone, Acrylonitrile, Ammonia, Benzene, Butane, 1-Butanol (Butyl alcohol), 2-Butanol(Secondary butyl alcohol), N-Butyl acetate, Isobutyl Acetate, Di-Isobutylene, Ethane, Ethanol(Ethyl alcohol), Ethyl acetate, Ethyl acrylate(Inhibited), Ethylenediamine(Anhydrous), Ethylene dichloride, Gasoline, Heptanes, Hexanes, Isoprene, Isopropyl, Ether, Mesityl oxide, Methane(Natural gas), Methanol (Methyl alcohol), 3-Methyl-1-Butanol(ISOAmyl alcohol), Methyl ethyl ketone, Methyl, Isobutyl ketone, 2-Methyl-1-Propanol(Isobutyl alcohol), 2-Methyl-2-Propanol (Tertiary butyl alcohol), Petroleum naphtha, Pyridine, Octanes, Pentanes, 1-Pentanol(Army alcohol), Propane, 1-Propanol(Propyl alcohol), 2-Propanol (Isopropyl alcohol), Propylene, Styrene, Toluene, Vinyl acetate, Vinyl chloride or Xylenes |
| CLASS 2 | GROUP E | Metal dusts, Aluminum, Magnesium |
| | GROUP F | Coal, Coke, Carbon black, Charcoal dust |
| | GROUP G | GROUP E or F, Including flour, Starch, Grain, Wood, Plastic, Chemicals |