

Product marking guide

Classification of equipment for use in potentially explosive atmospheres

| Classification of hazardous areas | | Canadian/IEC or NEC classifications | | |
|-----------------------------------|---|-------------------------------------|-----------------------------------|----------------------------|
| Flammable substances | Temporary behaviour of flammable substances in hazardous places | Typical zones | Required marking for installation | |
| | | | Equipment group | Equipment protection level |
| Gases vapours | Is present continuously or for long periods or frequently | zone 0 | II | Ga |
| | Is likely to occur in normal operation occasionally | zone 1 | II | Gb |
| | Is not likely to occur in normal operation but, if it does occur, will persist for a short period only | zone 2 | II | Gc |
| Dusts | Is present continuously or for long periods or frequently | zone 20 | III | Da |
| | Is likely to occur in normal operation occasionally | zone 21 | III | Db |
| | It is not likely to occur in normal operation but, if it does occur, will persist for a short period only | zone 22 | III | Dc |
| Methane dusts | - mines | | I | Ma |
| | - mines | | I | Mb |

| Subdivision of gases and vapours | | | | | | |
|----------------------------------|-----|-----|-----------------------|----------------------|-----------------|--------------|
| Apparatus may be used in group | | | Gases or vapours | | | |
| IIC | IIB | IIA | | | | |
| IIC | IIB | IIA | Ammonia | Ethyl alcohol | Gasoline | Acetaldehyde |
| | | | Methane | Cyclohexane | N-hexane | |
| | | | Ethane | N-butane | | |
| | | | Town gas, Acrylnitril | Ethylene oxide | Ethylene glycol | Ethyl-ether |
| | | | Hydrogen | Ethylene (acetylene) | Sulphide carbon | |

| Dust | |
|------|---------------------|
| IIIA | Combustible flyings |
| IIB | Non-conductive dust |
| IIC | Conductive dust |

Product stamp detail



Class and divisions



CLI.Div1.ABCD

.CLII.Div1.EFG.

CL I (Class I), Div1
Where ignitable concentrations of flammable gases, vapors or liquids are present within the atmosphere under normal operation conditions.

CL I (Class I), Div2
Where ignitable concentrations of flammable gases, vapors or liquids are present within the atmosphere under abnormal operation conditions.

Class I Areas
Group A: Acetylene
Group B: Hydrogen
Group C: Propane and ethylene
Group D: Benzene, butane and propane.








CLII (Class II), Div1
Where ignitable concentrations of combustible dusts are present within the atmosphere under normal operation conditions.

CLII (Class II), Div2
Where ignitable concentrations of combustible dusts are present within the atmosphere under abnormal operation conditions.

Class II Areas
Group E: Metal dust
Group F: Carbon and charcoal
Group G: Flour, starch, wood and plastic.

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| Protection technique | | | |
|--|--|------------|-----------------|
| Application | Type of protection | Marking | EN/IEC standard |
| All applications | General requirements | – | 60079-0 |
| Control stations, motors, fuses, switchgear, power electronics | Flameproof enclosure  | Exd | 60079-1 |
| Installation materials, motors, luminaries | Increased safety  | Exe | 60079-7 |
| Measurement and control, automation technology, sensors, actuators | Intrinsic safety  | Exi | 60079-11 |
| Switch- and control cupboards, analyse-apparatus, computers | Pressurisation  | Exp | 60079-2 |
| Coils of motors or relays, solenoid valves | Encapsulation  | Exm | 60079-18 |
| Transformers, relays, control stations, magnetic contactors | Oil immersion  | Exo | 60079-6 |
| Capacitors, transformers | Powder filling  | Exq | 60079-5 |
| See at the top - only for zone 2 | 'Non sparking' | Exn | 60079-15 |
| For use in zone 0, 1, 2 / for use in zone 1, 2 | Dust atmospheres | Ext | 60079-31 |

| Restriction for using apparatus | |
|--|---------|
| Requirements | Marking |
| Equipment without restriction | – |
| Equipment with special condition may be noted | X |
| Ex component, which is not intended to be used alone and requires additional certification before being used in hazardous area | U |

Certification number

IECEx **SIRA09.0103** **X**

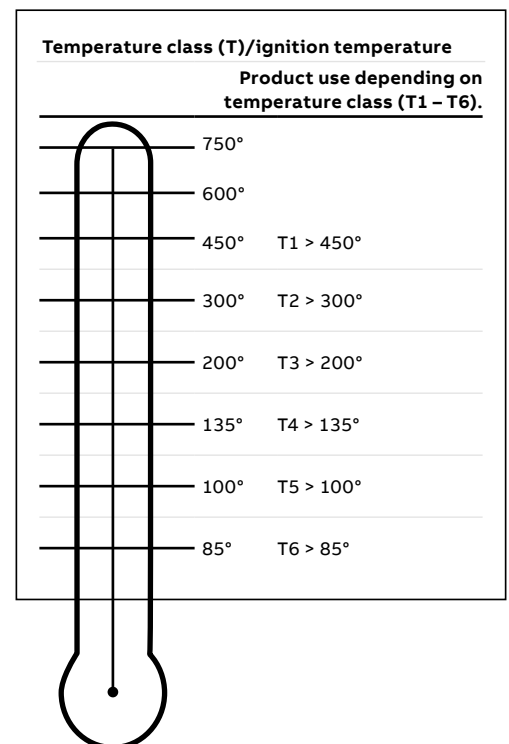
- IIA T1 Acetone 735°
- IIA T1 Ammonia 630°
- IIB T1 Carbon monoxide 605°
- IIA T1 Bensene 560°
- IIC T1 Hydrogen 560°
- IIA T1 Methane 537°
- IIA T1 Toluene 535°
- IIA T1 Styrene 490°
- IIA T1 Propane 470°
- IIA T1 1-Butene 455°
- IIB T1 Butadiene 430°

- IIB T2 Ethylene 425°
- IIA T2 Butane 372°
- IIA T2 Ethanol 363°
- IIA T2 Butylalcohol 359°
- IIB T2 Dimetyletcher 350°
- IIC T2 Acetylene 305°

- IIA T3 Nafta 290°
- IIA T3 Hydrogen sulphide 270°
- IIA T3 Cyclohexane 259°
- IIA T3 Hexane 233°
- IIA T3 Heptane 215°
- IIA T3 Kerosene 210°
- IIA T3 Dekane 201°

- IIB T4 Diethyl ether 160°

- IIC T6 Carbon disulphide 95°



New marking — EPLs (explosion protection levels)

The introduction of the EPLs and changes in the EN 60079 series standard has introduced new marking requirements.