



INFORMATION EXPLOSION PROTECTION



According to the **ATEX 2014/34/EU** directive, the manufacturer is obliged to manufacture his lifting equipment in accordance with the applicable rules, standards and regulations for explosion-protected equipment, to classify it in EX classes and to mark it.

The customer must specify either a classification or an EX zone.

Once the classification has been specified, we can make you an appropriate offer for the required hoist.

As an aid to orientation, we provide you here with an overview of the classification of explosion-protected equipment in accordance with the ATEX Directive.

The standards, regulations and guidelines of the responsible bodies, for example BG-Chemie, on the use of equipment in potentially explosive atmospheres must be observed by the operator when installing, assembling and operating EX-protected hoists. PLANETA offers hoists for the various applications, which are suitable for the following operating conditions in EX areas:



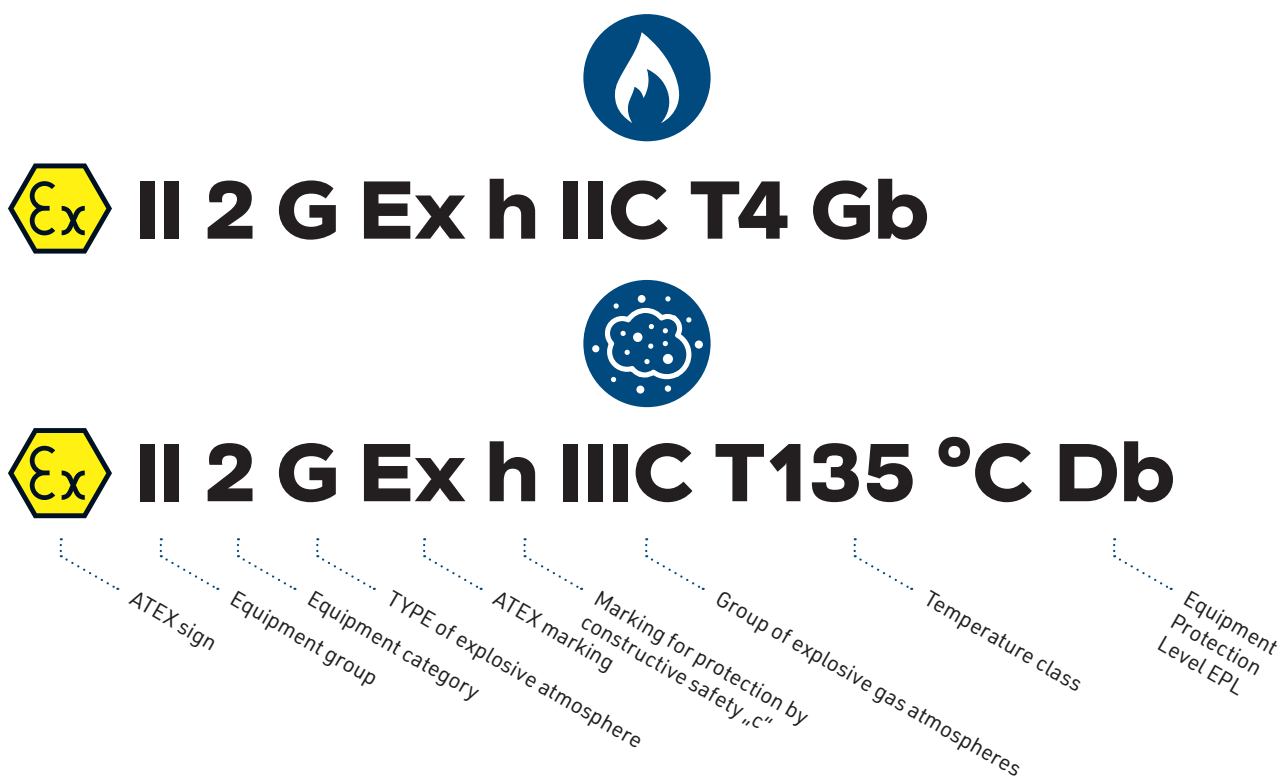
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- Use in **zone 1, 2, 21, 22** as well as in underground and surface installations of mines according to **category M2***
- Temperature classes up to T4 or 135 °C
- Suitable for environments with gases and dusts according to **IIC* und IIC**

* Restrictions:

- Gases up to **IIC** except ethylene and hydrogen sulphide
- Special conditions of use for equipment of the **MEDIUM/ HIGH version** intended for use in mining operations in accordance with category M2, in the event of the additional presence of flammable gases or combustible dust to the mine gas atmosphere, the classifications for gas or combustible dust also specified in the **MEDIUM / HIGH** version for gas or dust explosion protection shall apply. Dust explosion protection

Explanation of the designation of an Ex classification:



Classification and marking of potentially explosive atmospheres

Flammable substances	Temporary behaviour flammable substances in Ex-area explosive medium	Classification of potentially explosive areas	Marking of the equipment				Equipment Protection Level EPL		
			Equipment group	Equipment category					
Gases Fog Vapours (G)	is constant, long-lasting or frequent	Zone 0	II						
	occurs occasionally	Zone 1	II	1G	2G		Ga	Gb	
	probably does not occur or occurs only very rarely	Zone 2	II			3G			Gc
Dusts (D)	is present constantly, for a long time or frequently	Zone 20	II						
	occurs occasionally	Zone 21	II	1D	2D		Da	Db	
	Probably does not occur or occurs only very rarely	Zone 22	II			3D			Dc

Classification into explosion groups

Group II - explosive gas atmospheres			Group III - explosive dust atmospheres		
Propane Ammonia Methane Ethane	Acrylonitrile Ethylene Ethyl glycol Hydrogen sulphide	Hydrogen Acetylene Carbon disulphide	combustible suspended solids	non-conductive dusts	conductive dusts
IIA			IIIA		
IIB			IIIB		
IIC			IIIC		



Temperature classes

The max. surface temperature of the equipment must always be lower than the ignition temperature of the gas-vapour-air mixture. Equipment classified in higher temperature classes is also permitted in areas where a lower temperature class is required.

In potentially explosive atmospheres caused by combustible dusts, the surface temperature must not exceed $\frac{2}{3}$ of the ignition temperature in °C of the dust/air mixture. The specification of the temperature class in relation to PLANETA hoists assumes a maximum ambient temperature between -20 °C and +40 °C.

Temperature classes for explosive gas atmospheres

(Explosive dust atmospheres: Indication of the maximum surface temperature e.g.: T 135 °C.)

Propane Ammonia Methane Ethane Acrylonitrile Hydrogen T1 max. 450 °C	Cyclohexane Ethyl alcohol n-Butane Ethylene Ethylene oxide Acetylene T2 max. 300 °C	Petrol Diesel Heating oil n-Hexane Ethyl glycol Hydrogen sulphide T3 max. 200 °C	Acetaldehyd Ethylether T4 max. 135 °C	T5 max. 100 °C	Carbon disulphide T6 max. 85 °C
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The following information is based on our internally gathered experience, based on the ATEX Directive 2014/34/EU and the DIN EN ISO 80079-36 and -37 standard. for use in potentially explosive atmospheres are deposited with TÜV SÜD Product Service GmbH.

BASIC	MEDIUM	HIGH
- Used in zone 2 and 22 - Suitable for environments with gases and dusts acc. to IIB and IIIB, except ethylene and hydrogen sulphide - Basic protection against sparks from fast moving moving contact parts and against corrosion of critical contact parts. Versions: - Load and hand chains in galvanised design - Trolley with pulp buffer - Wheels with special coating	- Used in zones 1, 2, 21 and 22 as well as in underground and surface installations of mines according to category M2* - Suitable for environments with gases and dusts acc. to IIB and IIIB, except ethylene and hydrogen sulphide - Advanced protection against sparking of fast moving contact parts and against corrosion of critical contact parts Versions: - Support and load hooks treated with special coating - Load and hand chains in galvanised design - Trolley with pulp buffer - Wheels made of special material	- Used in zones 1, 2, 21 and 22 as well as in underground and surface installations of mines according to category M2* - Suitable for environments with gases and dusts acc. to IIC* and IIIC, except ethylene and hydrogen sulphide - High protection against sparks from fast moving contact parts and against corrosion of critical contact parts. - Replacement of some components with non-corrosive and low-sparking materials (partly accompanied by load reduction due to new technological data) Versions: - Support and load hooks treated with special coating - Load and hand chains in NIROSTA-Design - Trolley with pulp buffer - Wheels made of special material

* with restrictions see page <?>

Specified equipment protection levels and equipment markings for PLANETA-ATEX manual hoists and trolleys:

BASIC	MEDIUM	HIGH
 II 3 G Ex h IIB T4 Gc or  II 3 D Ex h IIIB T 135 °C Dc	 II 2 G Ex h IIB T4 Gb or  II 2 D Ex h IIIB T 135 °C Db or  I M 2 Ex h I T 135 °C (T4) Mb X	 II 2 G Ex h IIC T4 Gb X or  II 2 D Ex h IIIC T 135 °C Db or  I M 2 Ex h I T 135 °C (T4) Mb X



Load reduction of the standard chain hoists with „HIGH“ version

Example Manual chain hoist PREMIUM PRO-EX	Chain diameter in mm	Number of chain falls	Capacity in version BASIC / MEDIUM in kg	Reduced capacity with HIGH version in kg
PREMIUM PRO-II-EX 0.25	4 x 12	1	250	250
PREMIUM PRO-II-EX 0.5	5 x 15	1	500	500
PREMIUM PRO-II-EX 1	6 x 18	1	1,000	900
PREMIUM PRO-II-EX 1.5	8 x 24	1	1,500	1.250
PREMIUM PRO-II-EX 2	8 x 24	1	2,000	1.250
PREMIUM PRO-II-EX 3	10 x 30	1	3,000	2.000
PREMIUM PRO-II-EX 5	10 x 30	2	5,000	3.200
PREMIUM PRO-II-EX 10	10 x 30*	3	10,000	6.400

* Grade 100