



IECEX CB



ATEX NB



KSC HAZARDOUS LOCATIONS SERVICES

KSC Poland Sp. z o.o. (IECEX Certification Body / ATEX Notified Body)

sales@exksc.eu

ul. Chorzowska 150 40-101 Katowice, Poland

+48 32 784 12 15

www.exksc.eu

KSC Co., Ltd. (IECEX/ATEX Testing Laboratory)

help@exksc.com

1106, Cheoinseong-ro, Namsa-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea

+82 31 323 4905

www.exksc.com

ATEX DIRECTIVE MARKING

CE 2877 Ex II 2 G D

**CE** Denotes that a product complies with all the relevant European Directives  
**2877** Notified Body Number (KSC Poland Sp. z o.o.)  
**Ex** Specific marking for explosion protection  
**II** Equipment group (Could be I for mining or II for surface industry)  
**2** Equipment category (Could be 1, 2, 3 depending upon Zone of intended use) Mining applications (M1: equipment remains energised, M2: de-energised)  
**G D** Type of flammable atmosphere (G = Gas, D=Dust)

IEC / EN STANDARDS MARKING - GAS

Ex db IIC T4 Gb

**Ex** Denotes explosion protection  
**db** Denotes type of protection (see protection concepts for alternatives)  
**IIC** Denotes gas group (see gas groups for alternatives)  
**T4** Denotes temperature classification (see temp calss for alternatives)  
**Gb** EPL - Equipment Protection Level (see EPL table for alternatives)

IEC / EN STANDARDS MARKING - DUST

Ex tb IIIC T135°C Db

**Ex** Denotes explosion protection  
**tb** Denotes type of protection (see protection concepts for alternatives)  
**IIIC** Denotes dust group (see gas groups for alternatives)  
**T135°C** Denotes temperature classification (see temp calss for alternatives)  
**Db** EPL - Equipment Protection Level (see EPL table for alternatives)

AREA CLASSIFICATION

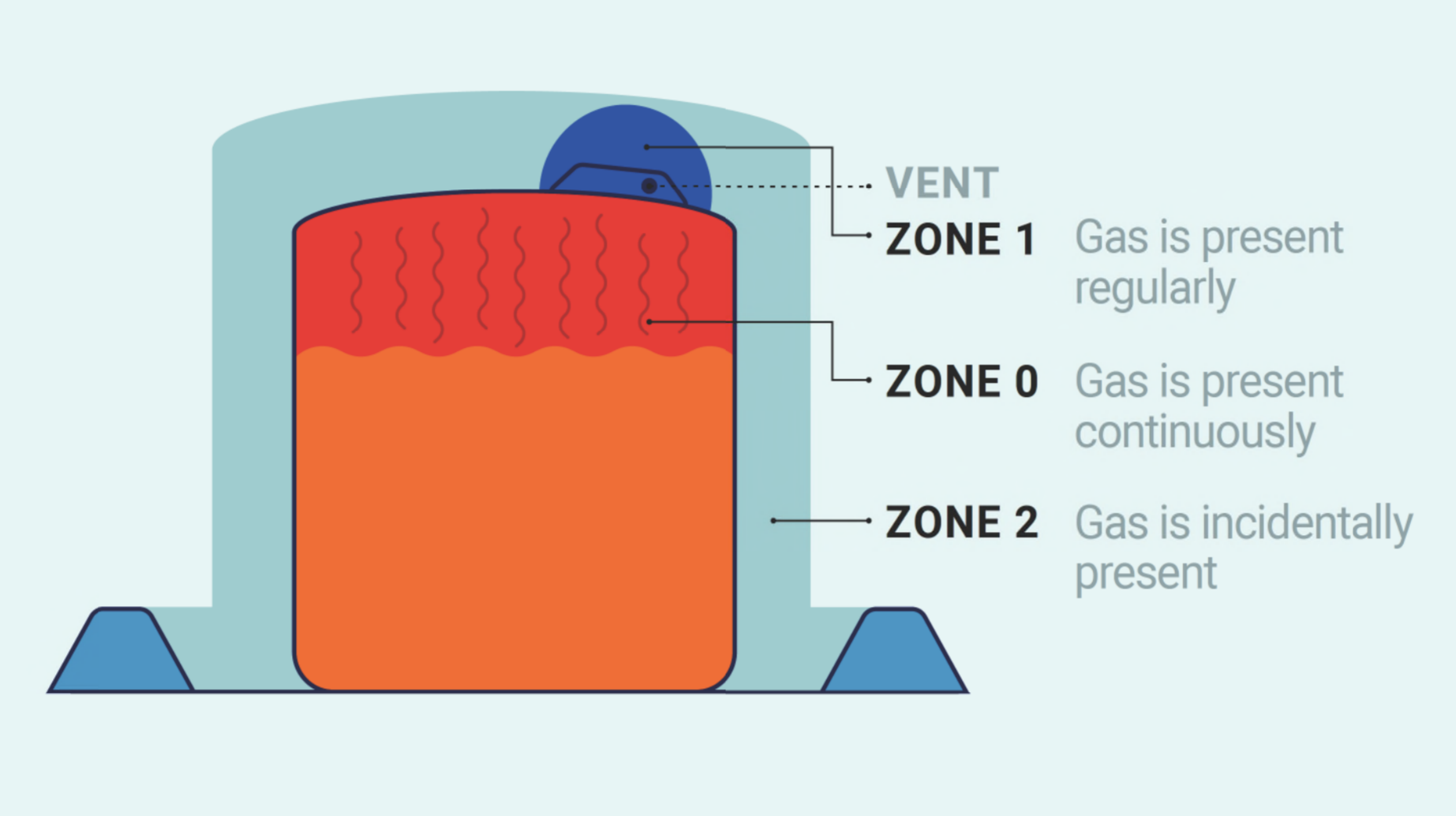
GAS	DUST	AREA CLASSIFICATION - Zone Systems (IECEX & ATEX)
0	20	Continuous Hazard - A potentially flammable atmosphere is present continuously or for long periods or frequently.
1	21	Intermittent Hazard - A potentially flammable atmosphere is likely to occur in normal operation occasionally.
2	22	Abnormal Hazard - A potentially flammable atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Reference: IEC 60079-10-1 and IEC 60079-10-2

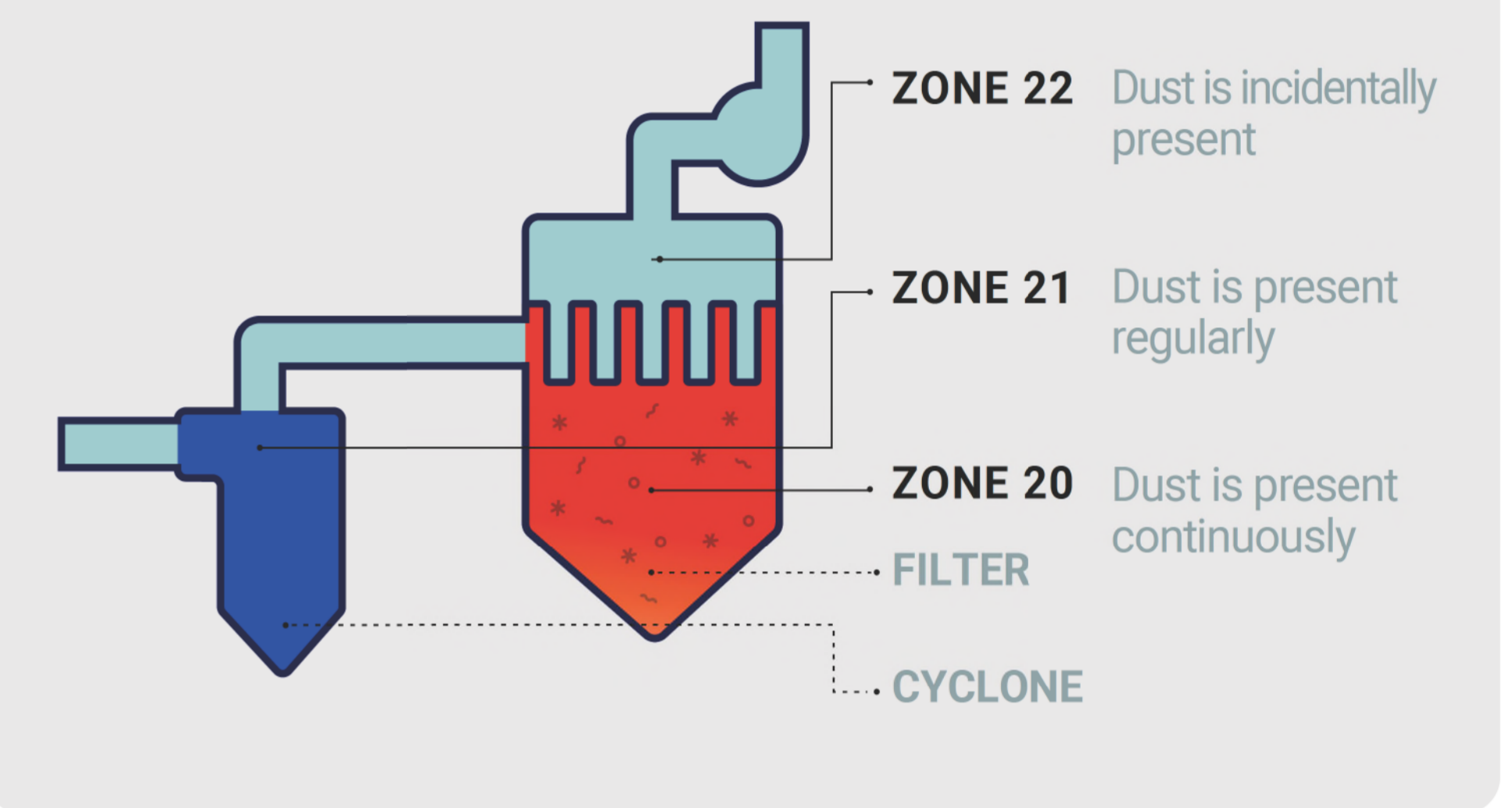
ZONES & EPL & ATEX CATEGORIES

ZONES	EPL	ATEX CATEGORIES
GAS GROUPS		
0	Ga	1G
1	Gb	2G
2	Gc	3G
DUST GROUPS		
20	Da	1D
21	Db	2D
22	Dc	3D

GAS ZONES



DUST ZONES



EXAMPLE OF MARKING PLATE

Manufacturer name: **MANUFACTURER**  
 Manufacturer address: **Address**  
 Product name: **Product Name**  
 Product type: **AB123**  
 IECEX Certificate No.: **IECEX KSCP 21.0001X**  
 ATEX Certificate No.: **KSCP 21ATEX1234X**  
 ATEX Marking: **Ex II 2G Ex db IIC T4 Gb II 2D Ex tb IIIC T135°C Db IP66**  
 Ambient Temperature: **Ta: -20°C to +60°C**  
 Warning marking: **WARNING - DO NOT OPEN WHEN ENERGIZED**

Serial No.: 12345 / 2021 (Serial number and year of manufacture)  
 Rating: 240VAC 50/60Hz 0.5A (Electrical parameters)  
 CE 2877 (CE marking and Notified body number)

GAS AND DUST GROUPS

Group I	Mining application	Firedamp and Coal Dust
Group II	Gas Groups - Surface and other locations	IIC IIB IIA Acetylene & Hydrogen Ethylene Propane
Group III	Dust Group - Surface and other locations	IIIC IIIB IIIA Conductive dusts Non-conductive dusts Combustible flyings

TEMPERATURE CLASS

NAME	TEMPERATURE CLASS	SELF-IGNITION TEMPERATURE	EQUIPMENT REQUIREMENTS
Ammonia	T1	630°	
Hydrogen	T1	560°	
Methane	T1	537°	
Propane	T1	470°	
Ethylene	T2	425°	
Butane	T2	372°	
Acetylene	T2	305°	T2 300°
Cyclohexane	T3	259°	T3 200°
Kerosene	T3	210°	T4 135°
Di-ethyl Ether	T4	160°	T5 100°
Carbon Disulphide	T6	95°	T6 85°

ZONE SYSTEM ELECTRICAL EQUIPMENT PROTECTION TECHNIQUE - GAS GROUP

ZONE SYSTEMS / CATEGORIES	PROTECTION TECHNIQUES	EX SYMBOLS	EQUIPMENT PROTECTION LEVELS	ATEX/IECEX STANDARDS
Zone 0 / Category 1(1G)	Intrinsic Safety Encapsulation Optical Radiation Flameproof *Note: Applies to catalytic sensors only	ia ma op is   op sh da *	Ga	IEC/EN 60079-11 IEC/EN 60079-18 IEC/EN 60079-28 IEC/EN 60079-1
Zone 1 / Category 2(2G)	Flameproof Purged/pressurized Powder Filling Liquid Immersion Increased Safety Intrinsic Safety Encapsulation Optical Radiation	db pxb   pyb q ob eb ib mb op is   op sh   op pr	Gb	IEC/EN 60079-1 IEC/EN 60079-2 IEC/EN 60079-5 IEC/EN 60079-6 IEC/EN 60079-7 IEC/EN 60079-11 IEC/EN 60079-18 IEC/EN 60079-28
Zone 2 / Category 3(3G)	Flameproof Purged/pressurized Liquid Immersion Increased Safety Intrinsic Safety Enclosed Break Hermetically Sealed Non-sparking Restricted Breathing Encapsulation Optical Radiation	dc pzc oc ec ic nC nC nR nR mc op is   op sh   op pr	Gc	IEC/EN 60079-1 IEC/EN 60079-2 IEC/EN 60079-6 IEC/EN 60079-7 IEC/EN 60079-11 IEC/EN 60079-15 IEC/EN 60079-15 IEC/EN 60079-15 IEC/EN 60079-18 IEC/EN 60079-28

Note 1: Zone 0, 1 and 2 general requirements are contained in IEC/EN 60079-0.  
 Note 2: Alternative requirements for certain Zone 0 (Ga) applications are contained in IEC/EN 60079-26.  
 Note 3: Equipment suitable for use in Zone 0 is permitted in a Zone 1 and Zone 2.  
 Note 4: Equipment suitable for use in Zone 1 is permitted in a Zone 2, but not in a Zone 0.  
 Note 5: Equipment suitable for use in Zone 2 is not permitted in either Zone 0 and Zone 1.

ZONE SYSTEM ELECTRICAL EQUIPMENT PROTECTION TECHNIQUE - DUST GROUP

ZONE SYSTEMS / CATEGORIES	PROTECTION TECHNIQUES	EX SYMBOLS	EQUIPMENT PROTECTION LEVELS	ATEX/IECEX STANDARDS
Zone 20 / Category 1(1D)	Intrinsic Safety Encapsulation Optical Radiation Enclosure	ia ma op is   op sh ta	Da	IEC/EN 60079-11 IEC/EN 60079-18 IEC/EN 60079-28 IEC/EN 60079-31
Zone 21 / Category 2(2D)	Purged/pressurized Intrinsic Safety Encapsulation Optical Radiation Enclosure	pxb   pyb ib mb op is   op sh   op pr tb	Db	IEC/EN 60079-2 IEC/EN 60079-11 IEC/EN 60079-18 IEC/EN 60079-28 IEC/EN 60079-31
Zone 22 / Category 3(3D)	Purged/pressurized Intrinsic Safety Encapsulation Optical Radiation Enclosure	pzc ic mc op is   op sh   op pr tc	Dc	IEC/EN 60079-2 IEC/EN 60079-11 IEC/EN 60079-18 IEC/EN 60079-28 IEC/EN 60079-31

Note 1: Zone 20, 21 and 22 general requirements are contained in IEC/EN 60079-0.  
 Note 2: Equipment suitable for use in Zone 20 is permitted in a Zone 21 and Zone 22.  
 Note 3: Equipment suitable for use in Zone 21 is permitted in a Zone 22, but not in a Zone 20.  
 Note 4: Equipment suitable for use in Zone 22 is not permitted in either Zone 20 and Zone 21.

NON-ELECTRICAL EQUIPMENT

AREA	PROTECTION TECHNIQUES	EX SYMBOLS	EQUIPMENT PROTECTION LEVELS	IECEX/ATEX STANDARDS
Zone 0 / Category 1	Constructional Safety Control of Ignition Source Liquid Immersion	h	Ga	EN/ISO 80079-36 EN/ISO 80079-37
Zone 1 / Category 2			Gb	
Zone 2 / Category 3			Gc	

IECEX/ATEX COMPLIANCE ROUTES

IECEX AREA	PROCEDURE	ATEX	
		AREA	PROCEDURE
Zone 0, 20	Certificate of Conformity and QAR (Quality Assurance Report)	Category 1	EU-TYPE EXAMINATION (ANNEX III) and Conformity to type (Annex V) or Production Quality Assessment (Annex IV - QAN)
		Category 2	EU-TYPE EXAMINATION (ANNEX III) and Conformity to type (Annex VI) or Production Quality Assessment (Annex VII - QAN)
Zone 2, 22		Category 3	Internal production control set out in Annex VIII

\* IECEX Unit certification (ATEX Category 1,2,3 Annex IX) does not require a QAR (QAN).