How to determine the ATEX zone and category ?

According to the directive 94/9/EC

An explosive atmosphere is defined as a mixture
- of flammable substances in the form of gases, vapours, mists or dusts,
- with air,
- under atmospheric conditions,
- in which, after ignition, the combustion spreads to the entire unburned mixture.

An atmosphere becoming explosive due to local and/or operational conditions, is called a potentially explosive atmosphere. The electrical equipment used in these areas must be designed as not to create sources of ignition capable of igniting these mixtures.

The directive divided equipment into two groups. Group I is applied for mining, and Group II for Surface industries. Group II is divided in subgroup (from the leak risk level IIA to the high level IIC). In the table below you can see the details about group II.

TABLE 1				
ATm.EXpl.	risk	zone	category	equipment to be used
Gas, vapour and fog	permanent or frequent	0	II 1 G	Very high level of protection (2 independent means in order to ensure the protection and the safety)
Gas, vapour and fog	occasional	1	II 2G	High level of protection (safe even in case of unusual conditions of functioning)
Gas, vapour and fog	occasional or for a short time	2	II 3 G	Normal level of safety (safe in case of usual conditions of functioning)
Dust	permanent or frequent	20	II 1 D	Very high level of safety (2 independent means in order to ensure the protection and the safety)
Dust	occasional	21	II 2 D	High level of safety (safe even in case of unusual conditions of functioning)
Dust	occasional or for a short time	22 conductive dust / non-conductive dust	II 2 D	High level of safety
			II 3 D	Normal level of safety