

Certified safety



- ❑ The **leak resistance** of all parts incl. housing, filter and accessories is guaranteed <math>< 10^6 \text{ Ohm}</math>.
- ❑ **Housing:** GRP, friction and impact sparks on the vacuum cleaner walls from particles picked up are reliably ruled out!
- ❑ **Filter:** Separation according to EN 60335-2-69.appendix AA
- ❑ The machine can be modified to extend its area of use from **temperature category** T3 to T4 or T5.

- ❑ If external sources of ignition can be **RELIABLY** ruled out, a suitable industrial vacuum cleaner may be used.
- ❑ If sources of ignition **CAN NOT** be **RELIABLY** ruled out, it is technically possible to reliably extinguish sources of ignition by using a **wet separator**.
- ❑ Also approved for use to pick up **ALUMINIUM** (in accordance with BGR 109) and **MAGNESIUM** (in accordance with BGR 204)

What about picking up residues of propellant powder or explosive substances?

Explosive and equivalent substances may only be picked up under observance of the relevant protective measures and after an expert has evaluated the situation and issued a certificate.

The following guidelines have been issued by the BICT (institute for chemical and technical examinations at the Federal Office of Defense Technology and Procurement):

- Safety measures for the use of vacuum cleaners in indoor shooting ranges.
- Statement on safety issues relating to the use of vacuum cleaners for removing propellant powder residues.
- Safety requirements of vacuum cleaners for companies processing explosive substances.

Flammable liquids may only be picked up to a very limited extent.



ANLAGENTECHNIK

For information on existing directives and regulations, please contact:
Your work safety officer and the technical officials of the relevant professional associations, the trade supervisory authorities and the TÜV technical testing organization.



Westhoyeler Str. 25
49328 Melle-Riemsloh

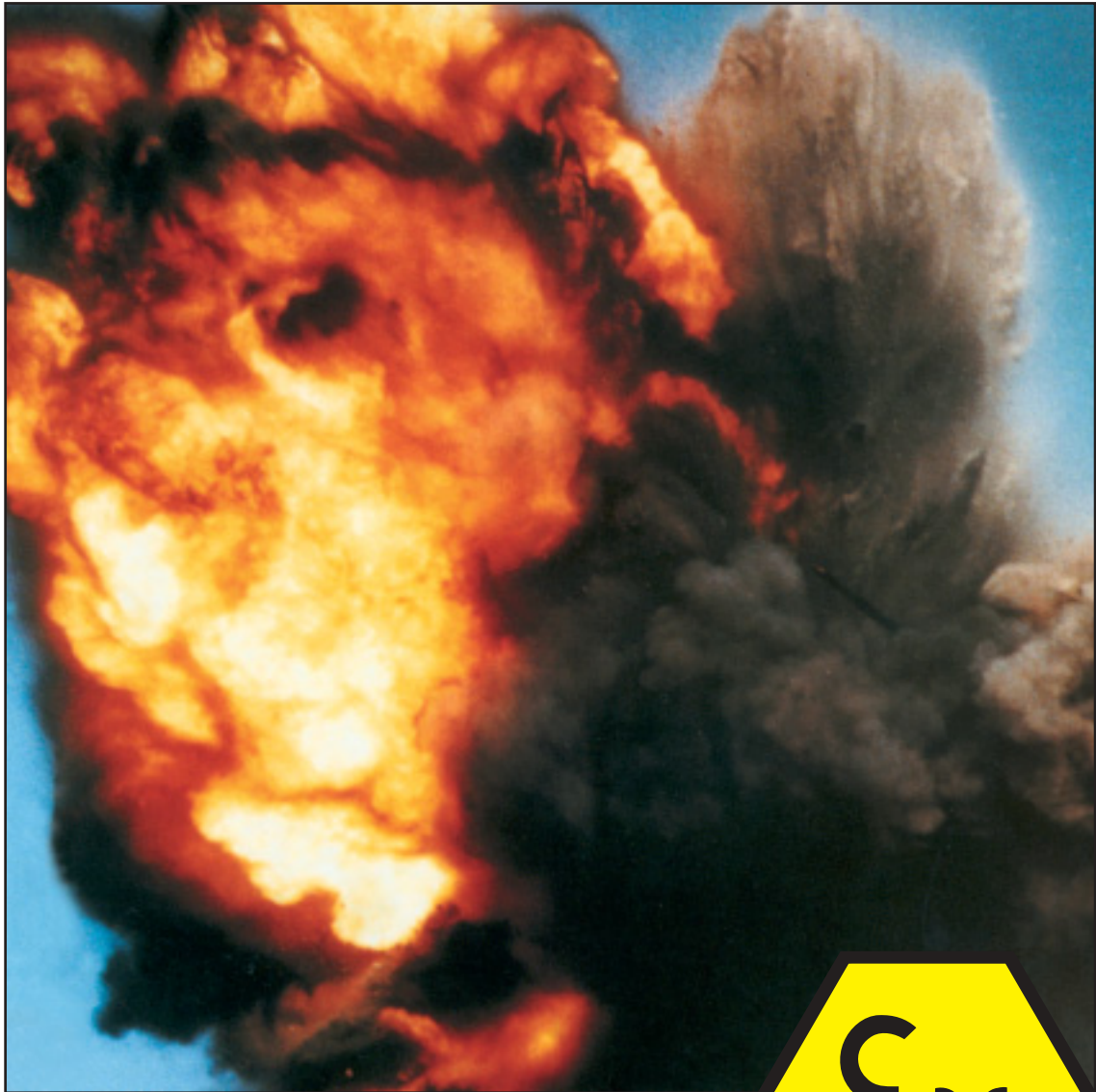
Telefon: 0 52 26 - 98 30-0
Telefax: 0 52 26 - 98 30-44

web: www.ruwac.de
e-mail: ruwac@ruwac.de



14-504-002-02.2004

Safety in the explosive gas and explosive dust area



94/9 EG (ATEX) directive

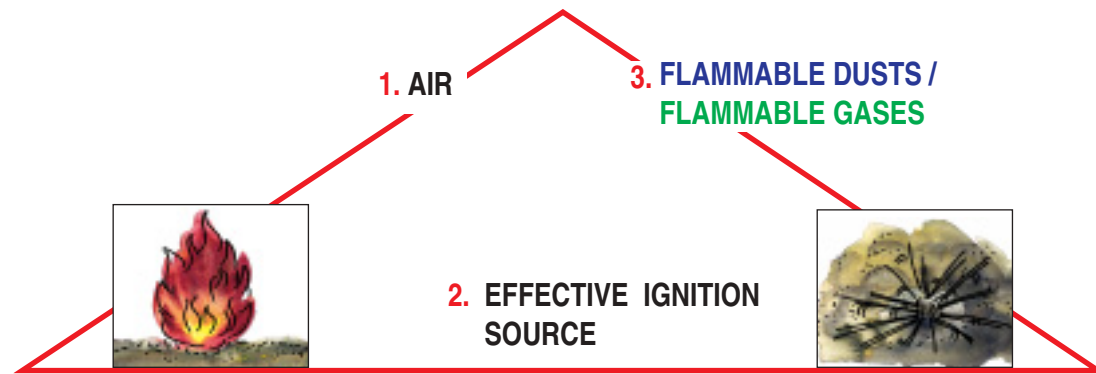


Expert Information from:



Explosive dust or explosive gas?

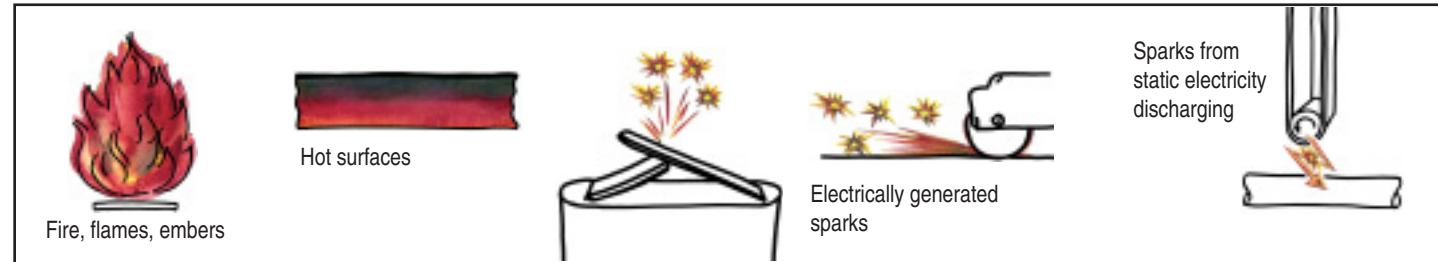
There is a danger of explosions when three conditions are simultaneously met.



Explosive atmospheres can occur when **flammable dusts (explosive dusts)** or **flammable gases or vapours (explosive gases)** are combined with air.

Additionally, an effective ignition source must be present which can ignite this ignitable atmosphere.

Possible EFFECTIVE IGNITION SOURCES are:



PROTECTIVE MEASURE:
Secure avoidance of ONE of the three conditions



It is necessary to either remove or prevent the occurrence of an explosive atmosphere, e.g. **regular cleaning to avoid dust deposits**, or to avoid ignition. It is not always possible to avoid the formation of an explosive atmosphere.

That is why the ignition of this mix must be avoided. Appliances that represent a possible ignition source must be kept at a safe distance or designed in such a way that ignition is not possible or not likely.

For this reason it is necessary to **approve machines** that can safely be used in explosive atmospheres and to provide them with identifying markings.

The basis for the approval of machines for use in explosion-risk areas is the European 94/9 EG (ATEX) directive, which applies for all EU member countries from 30.06.2003.

Even if a machine is explosion-protected, this still does not mean it may be used anywhere.

Machines for use in explosion-risk areas are subject to different requirements depending on the risk potential.

ATEX specifies various categories and risk potentials here:

Category 1	Appliances for use in areas in which explosive atmospheres are present constantly, over long periods or frequently. The appliances must remain safe even in the case of faults which rarely occur. Two independent protection measures are required.
Category 2	Appliances for use in areas in which explosive atmospheres occur occasionally. Safety must be guaranteed in the case of faults which frequently occur.
Category 3	Appliances for use in areas in which explosive atmospheres occur only rarely and for short periods. During normal operations the appliances offer the necessary degree of safety.

Definition of the categories

Appliance approval groups

Appliance group I	For use in underground mines Category M1 (M = Mining) - Category M 2
Appliance group II	For use in the non-mining area Category 1: very high safety requirements Category 2: high safety requirements Category 3: normal safety requirements

Category	Type of explosive atmosphere for which appliance is designed	For use in zone	Also for use in zone
1	Gas/air mix or vapour/air mix or mist Dust/air mix	0	1 + 2
1	Dust/air mix	20	21 + 22
2	Gas/air mix or vapour/air mix or mist Dust/air mix	1	2
2	Dust/air mix	21	22
3	Gas/air mix or vapour/air mix or mist Dust/air mix	2	-
3	Dust/air mix	22	-

Allocation of appliances for different zones

