



ATEX Industrial

Vacuum Solution

made in Italy



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| What is Atex?



“ATEX” is the acronym for “ATmosphère EXplosives”, that is explosive atmosphere.

An explosive atmosphere is defined as a mixture of flammable substances with air, under atmospheric conditions, in the form of gases, vapours, mist or dust in which, after ignition has occurred, combustion spreads to the entire mixture.

As for the risk due to the presence of potentially explosive atmospheres, the European Union has adopted two directives to improve health and safety, better known as **ATEX 2014/34/UE** (also ATEX 114) and **ATEX 99/92/CE** (also ATEX 137 now ATEX 153).



I How do an explosion occur?

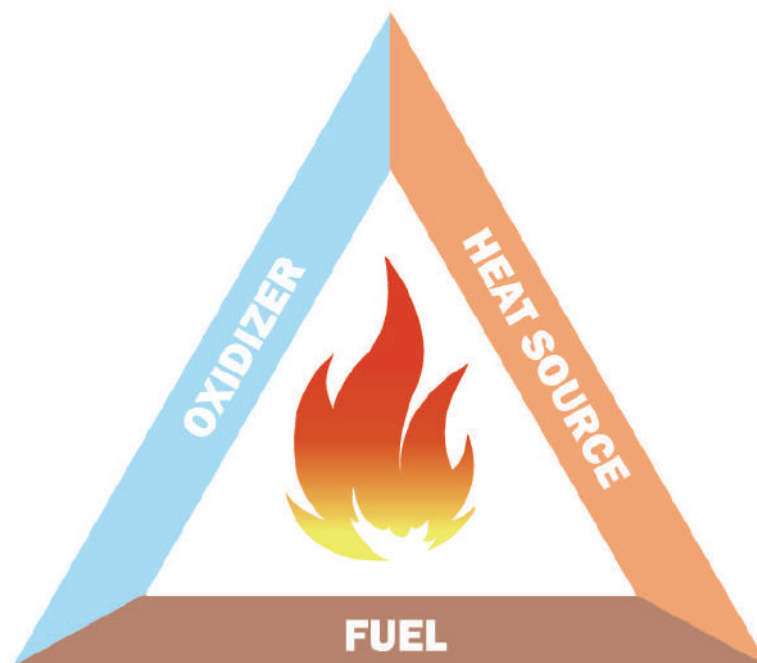
For a potentially explosive atmosphere to develop, the flammable and/or combustible substance must be present in a specific concentration.

The explosion can only occur in the presence of an ignition source and when the concentration is within the range of explosion in mass or volume of the substances, between lower (LEL) and upper (UEL) limits.

The explosion limits depend on the pressure of the environment and the percentage of oxidizer present in the atmosphere.

The condition necessary for an explosion to occur is the reaction of the following elements:

- > **FUEL:** is the material that can chemically combine with oxygen with emission of thermal energy.
- > **OXIDIZER:** is the substance which causes combustion by oxidizing the fuel. There is the development or liberation of chemically active atomic groups capable of producing chain reactions.
- > **HEAT SOURCE:** releases an adequate value of thermal energy which is capable of initiating the combustion process.



I Atex risk zones

The classification of hazardous areas is carried out in accordance with the recommendations suggested by **EN 1127-1**, **EN 60079-10-1** (gas-Ex) and **EN 60079-10-2** (dust-Ex), which divide the hazardous areas into three zones, depending on the frequency and duration of the presence of the explosive substance.

I GAS ZONES

ZONE 0 An area in which explosive atmospheres are present continuously or for long periods.

ZONE 1 An area in which explosive atmospheres are likely to occur in normal operations.

ZONE 2 An area in which explosive atmospheres are not likely to occur in normal operation but, if they do occur, will persist for a short period only.

I DUST ZONES

ZONE 20 An area in which explosive atmospheres, in the form of a cloud of combustible dust in air are present continuously, or for long periods or frequently.

ZONE 21 An area in which explosive atmospheres, in the form of a flammable cloud of dust in the air, are likely to occur in normal operations.

ZONE 22 An area in which explosive atmospheres may be present, in the form of a flammable cloud of dust in the air, but only for short periods.

I ZONES - CATEGORIES - LEVEL OF EPL PROTECTION

Zone of use	Substance	ATEX suffix	Level of EPL protection
Zone 0	Gas	1G	Ga - very high
Zone 1	Gas	2G	Gb - high
Zone 2	Gas	3G	Gc - normal
Zone 20	Dust	1D	Da - very high
Zone 21	Dust	2D	Db - high
Zone 22	Dust	3D	Dc - normal

I Industries in which the ATEX regulation is applicable

Potentially explosive atmospheres can be found in **industries** such as:



AERONAUTICS



FOOD

(storage and cereals, flour, sugar processing)



CHEMICALS



ENERGY

(storage of gaseous, liquid, solid fuel. Deposite of natural gas or LPG)



WINE

(distilleries, production of alcohol)



PHARMACEUTICALS



WOOD

(joineries, woodworking)



MECHANICAL

(car body shops)



METALLURGICAL



PLASTIC



CLEANING

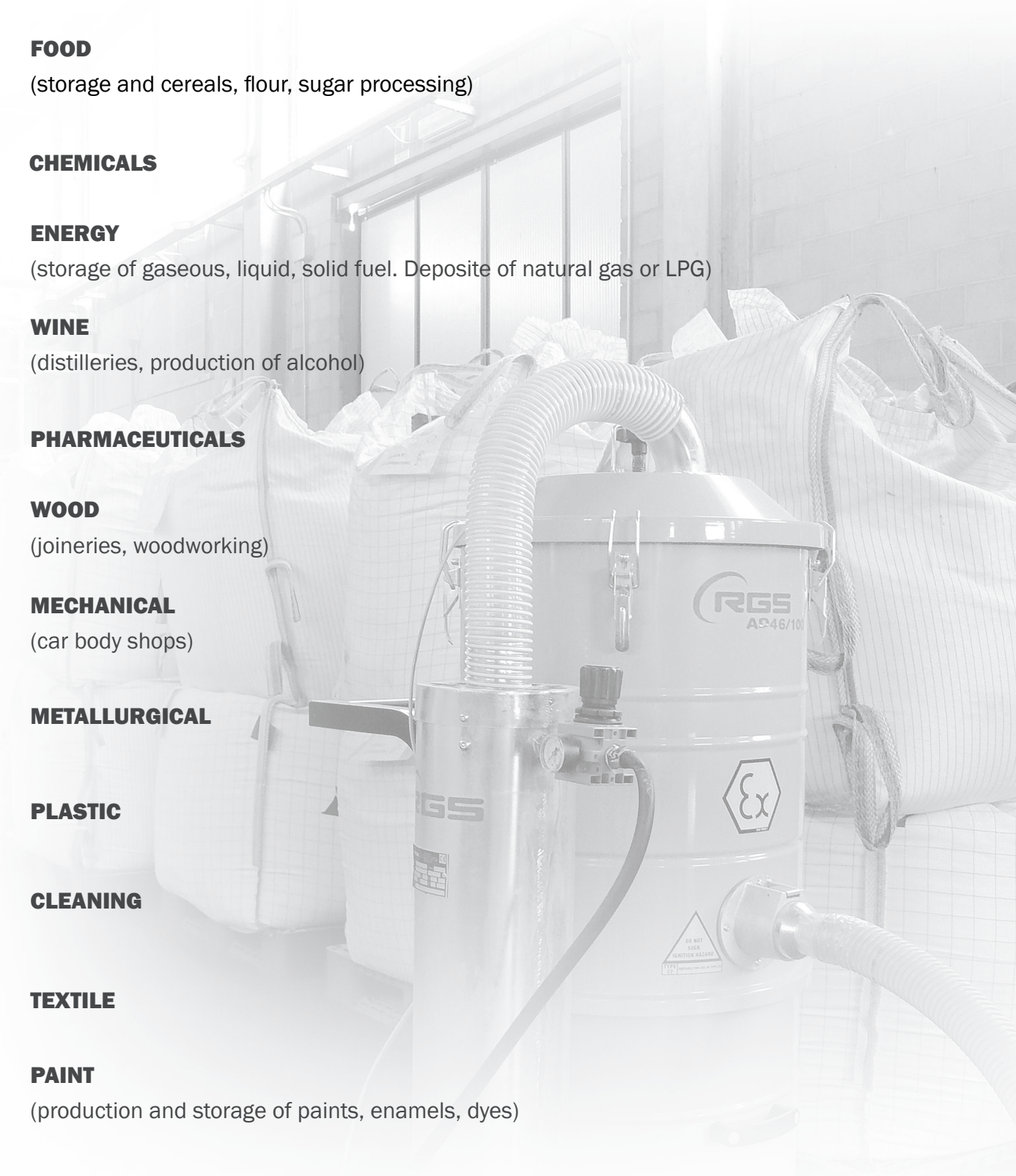


TEXTILE



PAINT

(production and storage of paints, enamels, dyes)



Characteristics of RGS Atex vacuum cleaners



I RGS Atex vacuum cleaners

RGS ATEX vacuum cleaners can be used in explosion risk areas due to the presence of explosive dusts or gases. RGS produces machines which are specifically designed for areas with the presence of **dust**, with suffix “**D**” or for areas with both the presence of **gas and dust**, with suffix “**GD**”.

All vacuum cleaners are certified for category 3, therefore they can be used in zones 2-22 and some models are certified for category “2”, hence usable in zones 1-21. For applications in zones 0-20 it is recommended to use machines running by *compressed air*. All machines are made with electrical components compliant with ATEX directives for the classification zones.

All models of **standard vacuum cleaner** are available in ATEX version and **specific vacuum cleaners** can be produced in accordance with customer’s risk analysis.



SINGLE PHASE ATEX INDUSTRIAL VACUUMS



THREE PHASE ATEX INDUSTRIAL VACUUMS



THREE PHASE ATEX INDUSTRIAL VACUUMS WITH HIGH POWER



COMPRESSED AIR VACUUM CLEANERS



THREE PHASE ATEX VACUUMS “FOOD AND PHARMA”

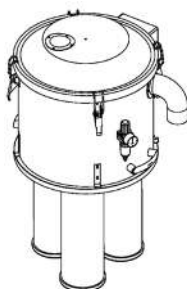
I Options and accessories

All vacuum cleaners can be equipped with a wide range of options and accessories to make the **work of the operator easy, light and safe** and to meet the various demands of the different areas of application. Versions are available with:

- 1 **Absolute filter** to trap even the finest dusts, with efficiency 99,995% (**class H14**).
- 2 **Automatic cleaning systems** of the filter.
- 3 **Collecting systems** of the sucked material into plastic bag or into continuous bag.
- 4 **Lifting systems** for the container by means of a forklift.
- 5 **Automatic stopping devices** in case of vacuuming of liquids.
- 6 **Discharging devices for liquids.**
- 7 **Kit front nozzle.**



1 *Kit absolute filter H14*



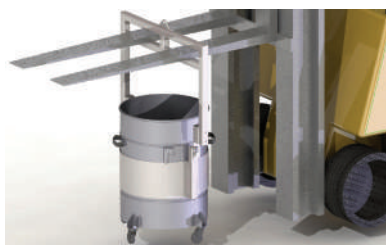
2 *Kit cartridge filters*



3 *Kit grill and depressor to collect the material into a plastic bag*



3 *Kit LONGOPAC for the collection of the sucked materials into tubular continuous bag*



4 *Kit for lifting the container*



5 *Liquid automatic stop*



7 *Kit front nozzle*



+ *Set of accessories in ATEX version for industrial cleaning*

| Other RGS Atex solutions

VACUUM CLEANERS

RGS Vacuum Systems offers a wide range of industrial vacuum cleaners of **various powers and capacities**: single-phase, three-phase and compressed air industrial vacuum cleaners.

There are also specific models for **sucking oils and shavings**, others for applications **in the food and pharmaceutical industry** as well as **special machines** made to meet the needs of the customer.



PNEUMATIC CONVEYORS

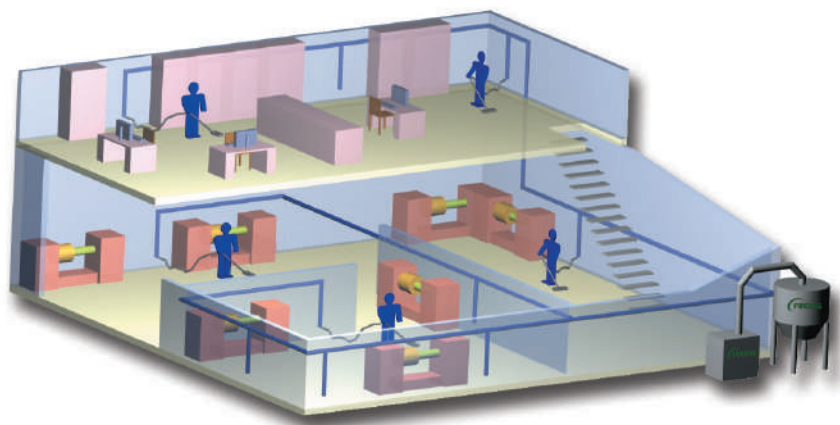
Pneumatic conveyors systems for powders and granules for all industrial sectors with **customization** options.



Thanks to a long experience in the sector, it is possible to create and design the most suitable and economical conveying system to solve customer problems, according to the type of product and the needs of the sector.

CENTRALIZED SYSTEMS

RGS Vacuum Systems offers a wide range of components for the realization of **centralized suction systems** (such as *suction units, collection silos, pre-separators, components for the piping, control systems*) and **centralised ventilation systems** (such as *dust collectors, electro-fans, mobile arms, control cabinets and duct components*).



All products can be made of painted steel, stainless steel and in **ATEX version** according to the needs of the customer and the application sector.

| RGS Services



**Design and production of
customized products**

Quick call maintenance service



**Preventive maintenance
agreements**

**Additions and updates to
regulations in force of the
installed systems**





 **Aspiratori industriali**
Vacuum cleaners

 **Impianti centralizzati**
Centralized systems

 **Trasportatori pneumatici**
Pneumatic conveyors

RGS in the World.



 **RGS headquarter**

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