+31(0)416 391 999 | www.ventinet.com | info@ventinet.nl

Atex appendix for plastic fans

Supplement to general manual

ATEX

Ventinet BV
Cartografenweg 26
5141 MT Waalwijk

IBAN: NL28RABO0334276780
BIC: RABONL2U
VAT: NL8177.25.568.B02

CC 18061331

INDEX

All the information in this appendix must be carefully read and understood. Pay particular attention to the operating standards with ATTENTION signals as their non observance can cause damage to the persons and/or machine.

Particular requirements for the installation and use in hazardous areas with gas or combustible dust.
Homogeneous Series - All Sizes for potentially explosive environments
Category 2G -2GD and 3G -3GD

Remark:
Save this Atex appendix together with the general manual for possible future references. We reserve the right to improve or modify manual or products and fittings with any obligation to update previous productions and manuals.

This Atex appendix should be used together with the general manual.

1.0 TERMINOLOGY

ASSEMBLY: (also to associate to assembly and disassembly)
Indispensable notions for installation, maintenance, reparations and possible transportation and dismantling.

INSTALLATION: (also to associate to activation)
Information on how to arrange the machine in accordance to the operation and maintenance requirements etc in conditions of safety. Both for the purposes of machine needs and for the situations on the site of destination.

CALIBRATION: (to associate also to checks and tuning)
Operations and indications relative to correct management of the regulations of the appliance and of the method of verification.

USE: (to associate also to activation)
All the necessary information for conduction distinguishing all the possible conditions of operation: manual, automatic, stand by, emergency, start up, stop etc. including the indications for first start up.

MAINTENANCE:
Normal verifications and restoration of the conditions of optimal operation, especially referred to situations of predictable consumption and/or wear. Must be carried out periodically.

REPARATION:
Interventions to restore the conditions of optimal operation, after a breakage. Where applicable the precautions needed for critical situations must be indicated.

2.0 INTRODUCTION

THE PRESENT INSTRUCTION MANUAL IS RELEVANT TO THE ASSEMBLED FAN, EQUIPPED WITH ELECTRIC MOTOR (IF INCLUDED IN THE PURCHASE AGREEMENT), SUITABLE TO BE INSTALLED IN AN EXPLOSION DANGER AREA (ATEX)
FOR WHAT CONCERNS THE SPECIFIC INSTRUCTIONS FOR THE ELECTRIC MOTOR, REFERENCE SHOULD BE MADE TO THE RELEVANT MANUAL RELEASED BY THE MANUFACTURER OF THE MOTOR, WHICH IS ENCLOSED TO THE INSTRUCTION MANUAL.

READ THIS MANUAL CAREFULLY BEFORE MACHINE INSTALLATION. EXPLOSIVE ATMOSPHERE IS A SERIOUS DANGER FOR THE HEALTH OF THE OPERATORS AND THEREFORE ALL POSSIBILE PREVENTIVE MEASURES MUST BE CARRIED OUT.

THE PRESENT MANUAL REFERS TO TWO CATEGORIES OF FAN FOR ATEX: CATEGORY 2 AND CATEGORY 3.
THE TWO CATEGORIES, IN TURN, DIVERSIFY IN TWO TYPES OF FLUID: GAS (G) OR GAS+DUST (GD).
THESE DATA CAN BE READ BOTH ON THE PLATE APPLIED ONTO THE FAN AND IN THE COMPLIANCE STATEMENT INCLUDED WITH THE MOTOR, AND THEY MARK THEIR SPECIFIC CHARACTERISTICS.

THE FOLLOWING TABLE DESCRIBES THE CORRESPONDENCE BETWEEN CATEGORY/CLASS AND CLASSIFIED AREA

CATEGORY	TYPE	DESTINATION	REMARKS	COMMENT
2	G (gas)	area 1-2	Atex area, with **occasional** presenceof **gas**.	The equipment included in this category is designed to ensure a high level of protection. It is intended for environments where explosive atmospheres caused by gas or dust are likely to occur. The protective equipment guarantees the required level of protection even in the presence of recurrent anomalies or operating defects.
	GD (gas-DUST)	area 21-22	Atex area, with **occasional** presence of **gas-dust**.	
3	G (gas)	area 2	Atex area, **gas rarely** present.	The equipment included in this category is designed to ensure a standard level of protection. It is intended for environments where explosive atmospheres caused by gas or dust are not very likely to occur, and even if they do occur, they are expected to last for a short time. The protective equipment guarantees the required level of protection for standard operation
	GD (gas-DUST)	area 22	Atex area, **gas-dust rarely** present.	

BEFORE INSTALLING THE FAN, THE USER MUST CAREFULLY CHECK THE CONSISTENCY BETWEEN THE ATEX ZONE AND THE CATEGORY OF THE FAN PURCHASED.

THE USE OF THE FAN IN THE PRESENCE OF HYBRID MIXTURES OF FLAMMABLE GASES, VAPOURS AND DUSTS IS FORBIDDEN.

The user, or his representative, is required to make UNDER HIS OWN RESPONSIBILITY the assessment of the zones type. He will also have to draw up a comprehensive risks assessment (possibly making use of qualified personnel) in which they are duly taken into consideration all the equipment and the possible risks.

CATEGORY 2 IS THEREFORE BUILT IN SUCH A WAY AS NOT TO TRIGGER THE AREAS IN WHICH THE ATEX EXPLOSIVE ATMOSPHERE IS OCCASIONALLY POSSIBLE.

CATEGORY 3 INSTEAD IS BUILT IN SUCH A WAY AS NOT TO TRIGGER THE AREAS IN WHICH THE ATEX EXPLOSIVE ATMOSPHERE IS NOT NORMALLY PRESENT, BUT IT CAN RARELY OCCUR (USUALLY IN CASE OF DEFECTS OR FAULTS)

VENTINET FANS DO NOT BELONG TO CATEGORY 1, WHICH MEANS THAT THEY ARE NOT SUITABLE TO OPERATE IN ATEX 0-20 AREAS, WHERE ATEX IS OFTEN PRESENT OR PRESENT FOR LONG PERIODS OF TIME.

THE “T” TEMPERATURE CLASS IDENTIFIES THE MAXIMUM TEMPERATURE OF THE EXPOSED SURFACES OF THE FAN. THE TABLE HERE BELOW SHOWS ALL THE TEMPERATURE CLASSES ADMITTED BY THE ATEX NORMS.

TEMPERATURE CLASS	MAXIMUM TEMPERATUREOF THE SURFACES
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

THE CLASS WITH HIGHER NUMBER IS ADEQUATE ALSO FOR THE CLASSES WITH LOWER NUMBER.
FOR EXAMPLE: TEMPERATURE CLASS T6 IS SUITABLE ALSO FOR T5-T4-T3-T2-T1 TEMPERATURE CLASS T4 IS SUITABLE ALSO FOR T3-T2-T1, NOT FOR T5 and T6

BEFORE INSTALLATION OF THE MOTOR IT IS IMPORTANT FOR THE USER TO CAREFULLY CHECK THE FAN CATEGORY, TYPE OF FLUID ANDTEMPERATURE CLASS.

3.0 ATEX MARKING

THE FAN IS CE ATEX CERTIFIED IN ACCORDING TO FOLLOWS MARKING:

II 2G Ex h IIB+H2 T4 Gb X	Fan for area 1 and 2 gas
or	
II 3G Ex h IIB+H2 T4 Gb	Fan for area 2 gas
or	
II 2GD Ex h IIB+H2 T4 Gb X **Ex h IIIC T135°C Db X**	Fan for area 1 and 2 gas or dust
or	
II 3GD Ex h IIB+H2 T4 Gb **Ex h IIIC T135°C Db**	Fan for area 2 gas or dust

Legend:

II	Surface installation (no mine)
2	Category Atex 2 (area 1 and/or 21)
3	Category Atex 3 (area 2 and/or 22)
G	Gas
D	Dust
Ex	Explosive Atmosphere
h	Not electric appliance
IIG+H2	Various gases + hydrogen
T4	Maximum temperature 135°C
Gb	Protection level for gas
X	Not standard parameter (not including vibrations sensor, see note here below)
IIIC	Conductive and not conductive dusts
T135°C	Maximum temperature 135°C
Db	Protection level for dust

NOTE: VIBRATIONS SENSOR

Model “2GD” including the letter X in the plate (see marking) is suitable for installation in an environment where combustible dusts are present (for example wood), therefore the machinery must be fitted with an alarm sensor intervening when the maximum vibration level allowed is exceeded, to avoid triggering of the dusts by any anomalous friction. This device must be connected to the stop sequence procedure of the motor so as to stop the machine in case of faulty operation (only for the “dusts” model). The device must be installed by the customer. Category 3GD model, instead, does not require a vibration sensor. The fan alarm and shut-down system SHALL comply with ISO 14694, respecting, where applicable, the EN ISO 80079-37 standard as regards the inspection of ignition sources.

4.0 WORKING

FAN'S TECHNICAL CHARACTERISTICS

AIM	Moves air with presence of corrosive gas/vapours that can be characterized by corrosive concentrations.
WORK CYCLE	*1. Aspiration* Through the housing inlet, the air is aspirated through a tube or directly from the environment in which it is installed. *2. Expulsion* The air can be directed into apposite pipes or into the outside air from the outlet of the housing.
OPERATIONS	Direct the air with presence of gas/vapours. The fan, as effect of the rotation of the impeller, creates a depression that aspirates the fluid into the volute and pushes it into the exit duct.
WEIGHT	The fan's weight (packaging included) is written on the tax document.

CHARACTERISTIC CURVES AND OPERATION PARAMETERS

The operation curves of the fan, the speed and torque parameters, are listed in the catalogue and in the quote provided. Or ask for the exact information.

CHARACTERISTICS OF THE MOTOR TO BE COUPLED

This manual describes the block fan + motor that comes with it (electroblowing fan)
In those cases when Venplast does not supply the fan with its own motor, the installation technicians must choose a motor with adequate characteristics and rotation speed, according to the curves and the operation parameters of the fan.
Moreover, the installation technicians must choose a motor in such a way as to have no more than one category difference between the inside and the outside.
The motors used must comply with the norms in force applicable to them, and they must be in compliance with norm EN 60079-0 minimum category 3G or 3GD.
Should only the fan be supplied, without the electric motor, the parts of the manual concerning the electrical parts must not be taken into consideration.
In this case the responsibility of the choice of the electric motor is up to the buyer, who will have to take care of choosing a motor which is compatible with the fan certification.

LIMITATIONS OF USE

PE-el and PP-el (antistatic polyethylene and antistatic polypropylene) are normally used; do not use with incompatible fluids.
As regards atmospheric conditions at infeed, the following limitations of use shall be respected:
- absolute pressures ranging from 0.8 bar to 1.1 bar;
- and temperatures ranging from -20 °C to +60 °C;
- and a maximum volume fraction of 21% oxygen content;
- and an increase in aerodynamic energy of less than 25 kJ / kg.

The minimum and maximum air flow limits and any other data are indicated in the catalogue.

5.0 SAFETY INFORMATION

SITUATIONS OF DANGER

It is strictly forbidden to introduce limbs or the whole body inside the parts in movement

Is is strictly forbidden to remove, take away, modify and/or alter the safeties.

This manual must be kept in a safe place by the head of department's office.
The employer must give this instructions manual (original or copy) to the workers in order to adequately inform them of correct machine use.
If the environment is potentially explosive, the user must respct the national law in according to D.Lgs. 81/08.

The fan is regarded as PARTLY COMPLETED MACHINERY according to the Machinery Directive 2006/42/CE; the buyer must therefore evaluate the risk of the appliance, on the whole, and adopt the necessary measures.
Uncovered moving parts (impeller) represent the main risk, which must be protected by protections in the areas of air entry and exit.

Foreign bodies that may be aspirated into the fan can be a trigger source, or can damage the fan itself impairing the safety functions. The installer, or the user, must therefore arrange a suitable system in the channel to stop foreign bodies.
Law EN14986:2007 foresees that a device to stop solid bodies is created with a level of protection not inferiour to IP20.

The fan is suitable to work in an external atmosphere, or fluid sucked, with a maximum temperature field of -20°C +60°C.

The user must therefore know that the reference plate for the whole unit must always and only be that of the fan.

Some fan models come with internal inspection door. It is recommended to open it only when the machine is stopped.
The fan does not come with speed regulation with operation (inverter).
Should the buyer need a speed regulation, he must contact the manufacturer to install the necessary additional protection measures (thermoprotector on the motor, speed limiting device, etc...)
The systems installed in explosion dangerous areas may have to undergo tests by the relevant authorities according to the national law.

Since the fan does not guarantee stability of its shaft, the surrounding area is to be considered explosive Atex 2-22.

The input of foreign matters into the fan can damage it, it is therefore necessary for the user to arrange suitable mesh stopping systems to stop the foreign matters larger than 3 mm.

The fan may be installed outdoors or indoors.

When assembling, disassembling and carrying out maintenance on the fan, it is necessary to use the personal protective equipment established by the user's Employer according to their risk assessment. By way of example, but not limited to, the following items are recommended PPE: Safety footwear, abrasion-resistant or chemical protective gloves (as appropriate), and goggles.

6.0 CONNECTION TO THE ELECTRICITY SUPPLY

The electrical connection must be done by a qualified electrician and must be carried out in compliance with norm CEI EN 60204-1.
Electrical cabling must be compatible with the equipment category (2 or 3), else it may render null and void all the Atex protections of the electric fan.
It is recommended that the motor is protected by short circuits, by overload and lack of phase.
It is recommended that ground electrical connection be carried out in the relevant clamp.

7.0 PACKING AND TRANSPORT

The fan must be transported inside a box or on a pallet.

The fan must be handled as it has been delivered, it is heavy and has sharp and protruding parts which are dangerous and therefore the necessary individual items of protection must be used.

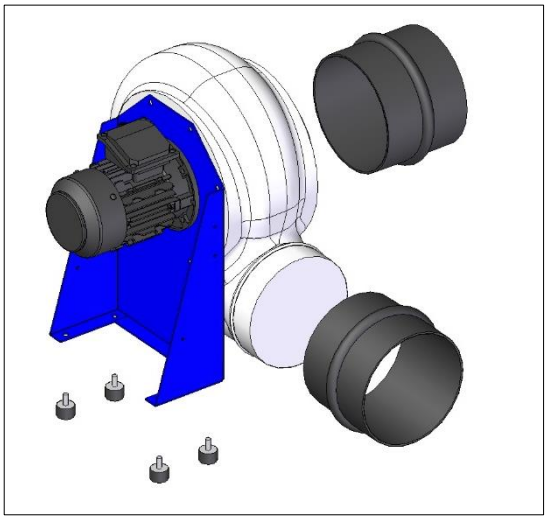
Make sure the lifting parts are adequately oversized for the weight needing lifting. Do not for any reason go near the equipment if it has not touched the ground and if the lifting measures are not active.

For safety reasons do not handle weights exceeding 20 kg by hand, in according to the national law D.Lgs.81/08.
For weights exceeding 20 kg, carry out lifting operations together with other operators or use appropriate lifting devices.

8.0 INSTALLATION

Before carrying out machine installation, the area must be made safe from danger of explosions. This can be obtained by eliminating the sources of emission of inflammable substances and combustible dusts present in or around the area.
Verify that there is sufficient room around the motor to enable air circulation in order to avoid overheating.

- Transport and unpack as described beforehand
- Use the fan itself to individuate the position of the fixing screws.
- Make the slots.
- Position the fan so that the slots of the support structure corrrespond with those of the surface of installation.
- Fix the structure to the surface using pressure stoppers or bolts depending whether the surface of installation is of iron or of cement. Use of the antivibration supports is recommended. (see photo)
- Connect the fan case with an equipotential cable to the metal mass of the motor, or to an arranged equipotential node.
- Connect the inlet and outlet pipes (see photo), taking care to avoid applying thrust forces onto the fan itself, in such a way as to avoid structural deformations which may give origin to frictions between the revolving unit and the fixed parts.
- If this is not arranged on the fan case, arrange for the fan to be inspected when needed.



- If present, apply the condensation discharge in the low part of the volute to allow the condensation to drain away. Make sure there is a system to collect this condensation.
- Protect the fan using apposite grids/grates to avoid contact should the dangerous moving parts be accessible.
- The channels must be in compliance with the ISO norms 5801 and 5802, for correct design and installation devoid of vibrations.

9.0 FAN ASSEMBLY AND DISASSEMBLY

DISASSEMBLY

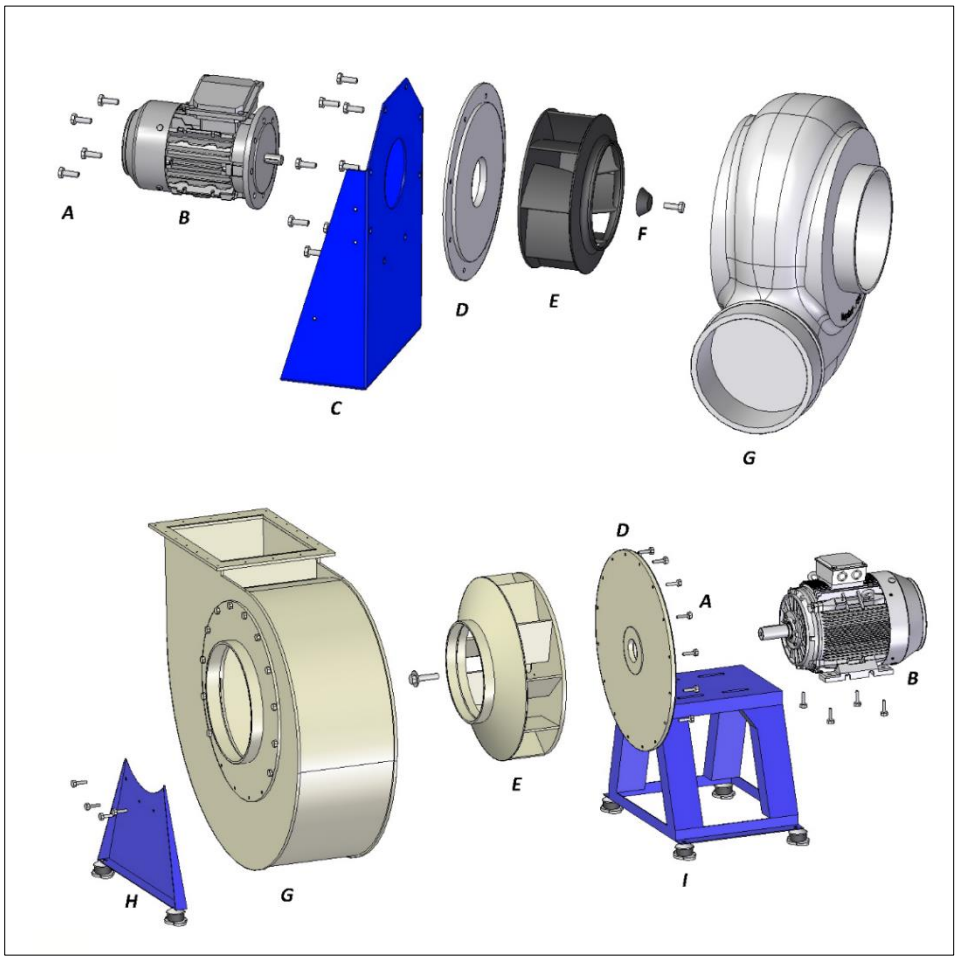
1. Stop the appliance by cutting off the electricity supply.
2. Remove the aspiration and return tube from the appliance.
3. Unscrew the bolts that fix the volute to the support structure
4. Unscrew the anchor screw of the impeller on the electric motor shaft.
5. Extract the impeller
6. Unscrew the bolts that fix the electric motor.
7. End of disassembly.

ASSEMBLY

1. Screw the anchor screws that fix the electric motor.
2. Assemble the impeller on the motor shaft.
3. Screw the anchor screws of the impeller on the shaft of the electric motor.
4. Screw the anchor screws that fix the volute to the support structure.
5. Restore the return and aspiration tube from the appliance.
6. End of assembly.

CALIBRATION

The fan does not require initial calibration. Make sure that the clearance between the impeller and the auger is 2 mm.



A=SCREWS
B=MOTOR
C=MOTOR SUPPORT
D=MOTOR PLATE
E=IMPELLER
F=OGIVE
G=HOUSING
H=FRONT SUPPORT
I=ANTIVIBRATION SUPPORT

10.0 MAINTENANCE AND REPAIR

WARNING: Maintenance must be carried out only by specialized technical personnel, who know the machine and the risks connected to it.

WARNING: before carrying out maintenance attach signs “maintenance in progress” in well visible and various places.

WARNING: wear protective gloves suitable for contact with the nature of the fluid with possible presence of gas/corrosive/ harmful or toxic vapours and its deposits.

WARNING: It may be necessary to reduce the time between inspections if the fan is exposed to dust and corrosive atmospheres. Required maintenance checks may depend on local operating conditions.

WARNING: to see more clearly inside the volute use a portable auxiliary light with protection.

WARNING: before intervening on the fan make sure the electricity supply is cut off and that measures of prevention against undesired start up have been taken.

WARNING: The impeller presents an inertia, therefore after fan shut down it continues to rotate for some time depending on its size. Wait for complete shut down before access. Consider also the possibility that the impeller can start to rotate caused by the currents of air inside the pipes.

WARNING: The installed monitoring devices (such as the monitoring systems for temperature, vibrations and media or similar devices) shall be checked regularly, in order to follow a specific plan established by the user in case more frequent checks are needed.

MAINTENANCE TABLE

INTERVENTION	PERIODICITY
Daily visual check of the state of the equipment and of any non-standard noises.	Every day
Replacement of the bearing of the electric motor and of the conveying support, if present.	every 30.000 hours
Integrity of the marking plate CE ATEX. Absence of rust in the internal and external metal parts.	every 1.000 hours
Fastening of bolts and nuts Internal and external cleaning (in particular removal of inflammable layers of dust) Tensioning of the conveying belts (only for models with belt conveying system) Minimum space between impeller and cone and nozzle (min 2 mm)	every 500 hours

Overall integrity of the structure Check of vibrations. Check of unusual noises. Check for any overheating of the impeller and/or the bearings. Check presence of dust layers.	every 40 hours
Complete overhaul of all equipment.	Every 30.000 hours
Inspection of seal wear.	Every 15 days

Refer to page 3 for terminology, and to the table on page 18 for the recommended spare parts (individual parts).

11.0 CLEANING

Carry out regular cleaning operations at appropriate intervals in all applications where combustible or non-combustible dust is expected to accumulate on the surfaces of the fan itself and of its components.

PREVENTIVE MEASURES

Cut off the electricity supply and carry out the protection measures against undesired start up.
Discharge the condensation inside the volute making it flow away.

RECOMMENDED PRODUCTS

Use only and exclusively compressed air if the appliance is used to convey air with presence of gas/vapours without particles in suspension.
Should the appliance take in vapours of particular chemical substances, refer to the safety file of the substance itself, to individuate the most suitable product for cleaning.

BEHAVIOUR TO BE ADOPTED

1. Stop the appliance by cutting off the electricity supply.
2. Gain access to the internal part of the volute by disassembling it as described in the relative chapter or through the inspection door (where applicable).
3. Assemble the volute as described in the relative chapter.

WARNING:
The fans which have been certified for dusts (D-GD) must be kept clean from exceeding layers of dust, both internally and externally.
The inflammable layer of dust is an obstacle to the heat dissipation of the motor, which may become overheated and set to fire the layer above it.
The internal layer instead, may obstacle the mobile parts in their interconnected motion, and thus triggering frictions.
Follow the cleaning procedures table provided, as laid out by Ventinet.

12.0 FINDING BREAKAGES

The following table shows :
- The description of the problem that is the most probable symptom of malfunction;
- The possible cause or causes of damage;
- Suggested solutions;

Finding breakages can be carried out by expert and qualified technical maintenance personnel, who know the machine and the risks connected to it.

PROBLEM FOUND	CAUSE	SOLUTIONS
Lack of capacity (with reduction of power at normal speed of rotation)	Tubes obstructed and/o aspiration pointsobstructed. Direction of rotationinverted Impeller obstructed Insufficient speed ofrotation	Clean tubes and hood, check position ofthe shutters Check connection of winding on motor terminal box Clean the impeller using the apposite door hatch when the appliance is shut down Check voltage and connect the clamps ofthe motor Check transmission, check that the beltsdo not slide
Eccessive air capacity	Speed of rotation higher than datas on the catalogue.	Check the speed of motor rotation and restore the RPM indicated.
Insufficient pressure	Loss of air in the duct system or badlyconstructed or installed components , or bypassshutters not perfectlyshut Speed of rotation too low Direction of rotationinverted Impeller partially blocked and/or damaged	Check the system and substitute thefaulty components Clean tubes and hood, check position ofthe shutters Check electric connection Check position of assembly and conditionof the impeller

PROBLEM FOUND	CAUSE	SOLUTIONS
Reduction of Performance after a satisfactory period of operation	Leakage in volute casings and/or leakage in the inlet or outlet tubes. Tubes obstructed and/o aspiration points obstructed. Direction of rotation inverted. Impeller obstructed. Insufficient speed of rotation.	Substitute the gaskets and verify the condition of channeling. Clean tubes and hood, check position of the shutters. Check connection of winding on motor terminal box. Clean the impeller using the apposite door hatch when the appliance is shut down. Check voltage and connect the clamps of the motor. Check transmission, check that the belts do not slide.
Start up difficult	Excessive powerabsorption	Use a current clamp to check the motor's energy absorption. Check the data on the motor plate.
Excessive noise	Elevated number of rotations to obtain the required performance. Break down of the bearings.	Stop the fan immediately: hazardous situations may occur. Use of soundproof systems and/or silencers; choose an appliance with a bigger size equal to the performance or an appliance with minor peripheral speed. Check bearing wear (in particular for the airtight ones).
Vibrations	Incorrect impellerbalancing or impeller scraping on the volute Unbalance of the rotating parts Support structure not suitable	Check balancing of the impeller Check impeller balancing again Add weights to the structure to make it more stable

13.0 DESCRIPTION OF THE MOST COMMON ACCESSORIES

The fan has the following accessories that are available on request:

- Anti vibration coupling: absorb the vibrations that can be transmitted in the tubes of the aspiration system.
- Anti vibration supports: absorb the vibrations that can be transmitted to the support of the appliance.
- Adjustable damper: regulates the capacity of air in the tubes.
- Tubes: to connect the fan to the system.
- Condensation discharge: unloads the condensation that forms inside the volute.
- Curves and reductions: make up the junctions between the lengths of the pipes.

14.0 DISMANTLING

SITUATIONS OF DANGER

Connected to the fact that some of the parts of the appliance are heavy.

PARTS, ELEMENTS, SUBSTANCES THAT REQUIRE PARTICULAR PROCEDURES

No part of the appliance must be disposed of in the environment.

Every part, component or group of components must be grouped in accordance to the type of material.

For the modality to be followed and the means adopted follow the prescriptions of the law in force at the date of dismantling.

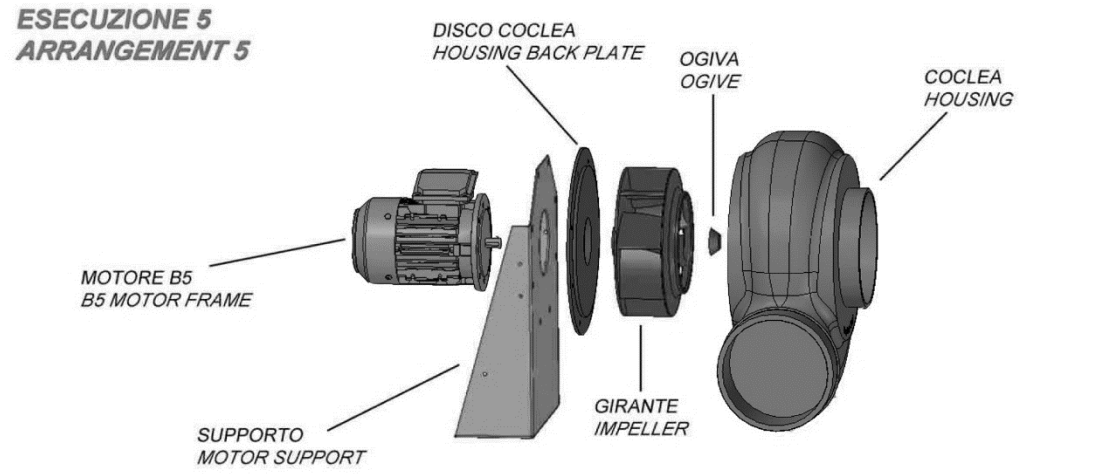
Adopt the safety measures in accordance to the type of fluid conveyed by the fan (acids, bases, toxic, harmful, corrosive, etc…)

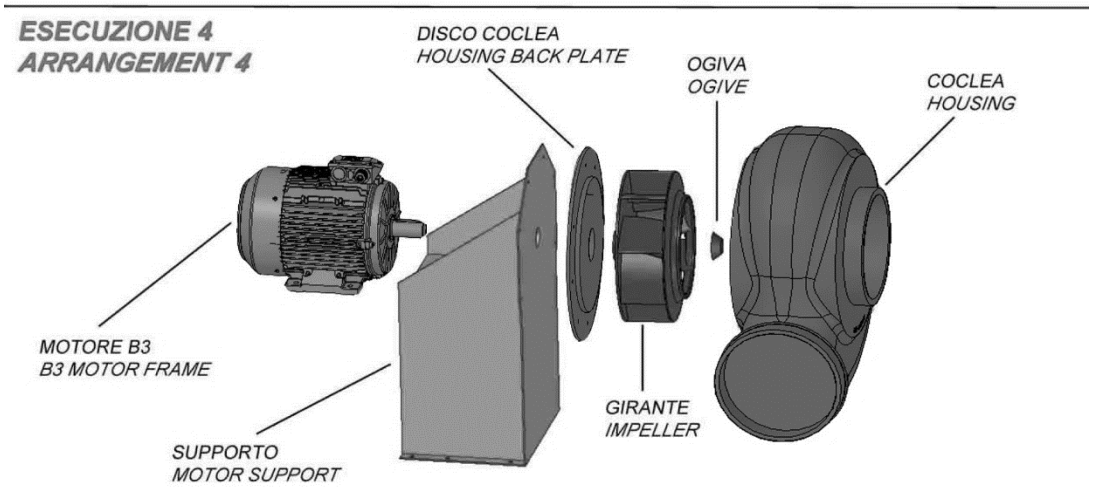
15.0 OUT OF USE

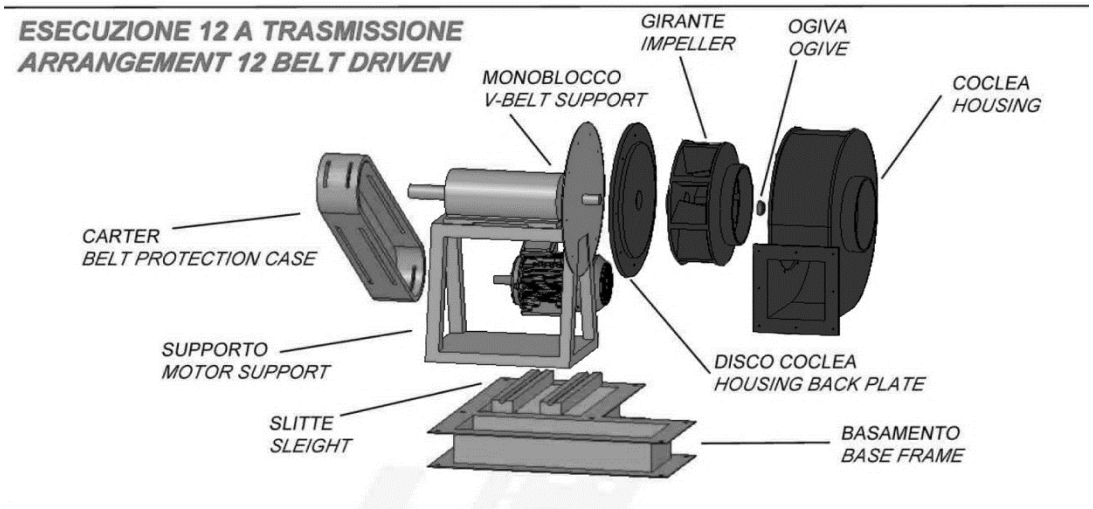
- Stop the appliance.
- Cut off the electricity supply
- Disconnect the electric cables of the motor (by a qualified electrician only).
- Spread a slight layer of oil on the metal parts to prevent oxidation.
- Cover the appliance with a nylon covering.

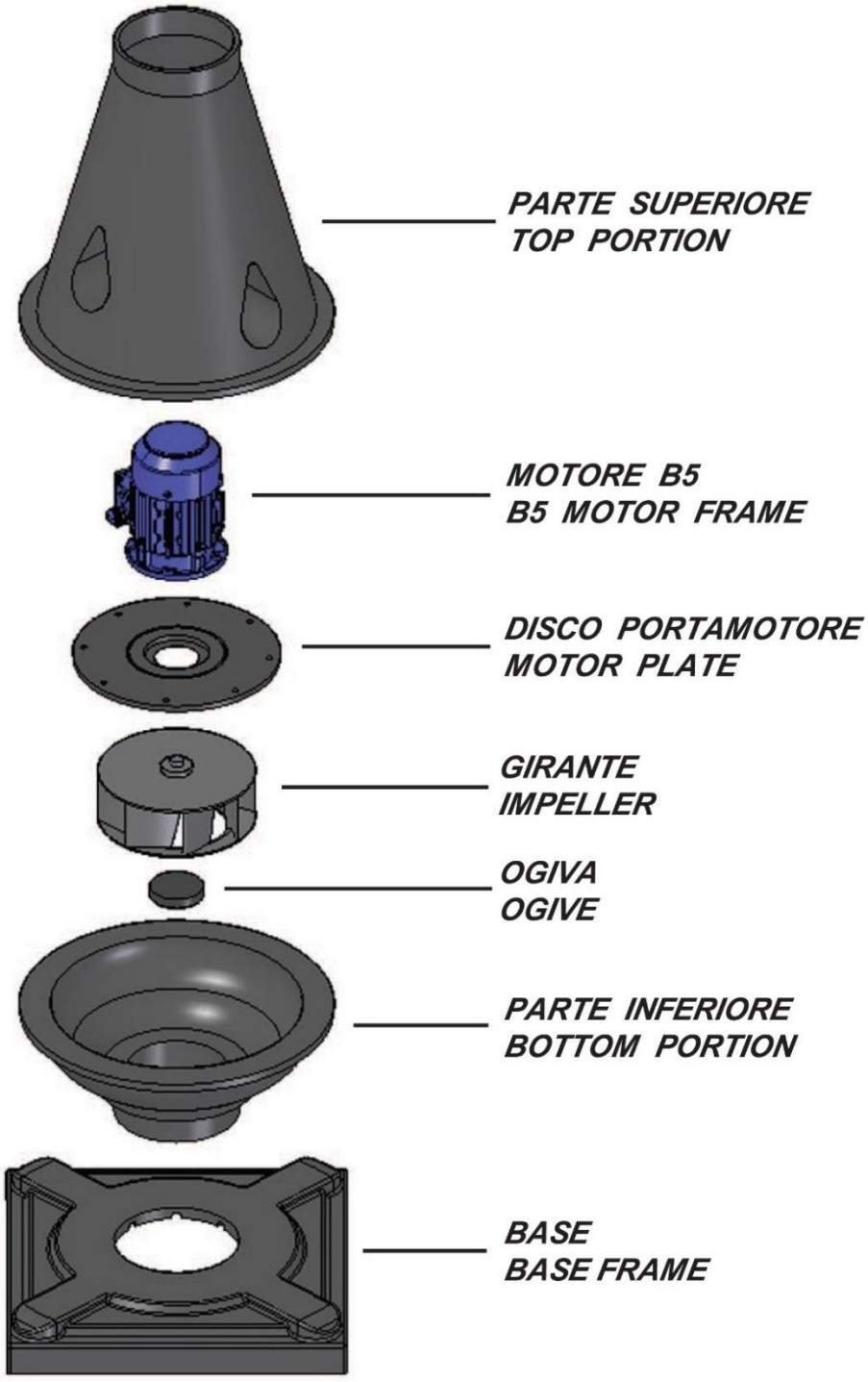
16.0 SPARE PARTS TABLE

Centrifugal fans VN-Plastic

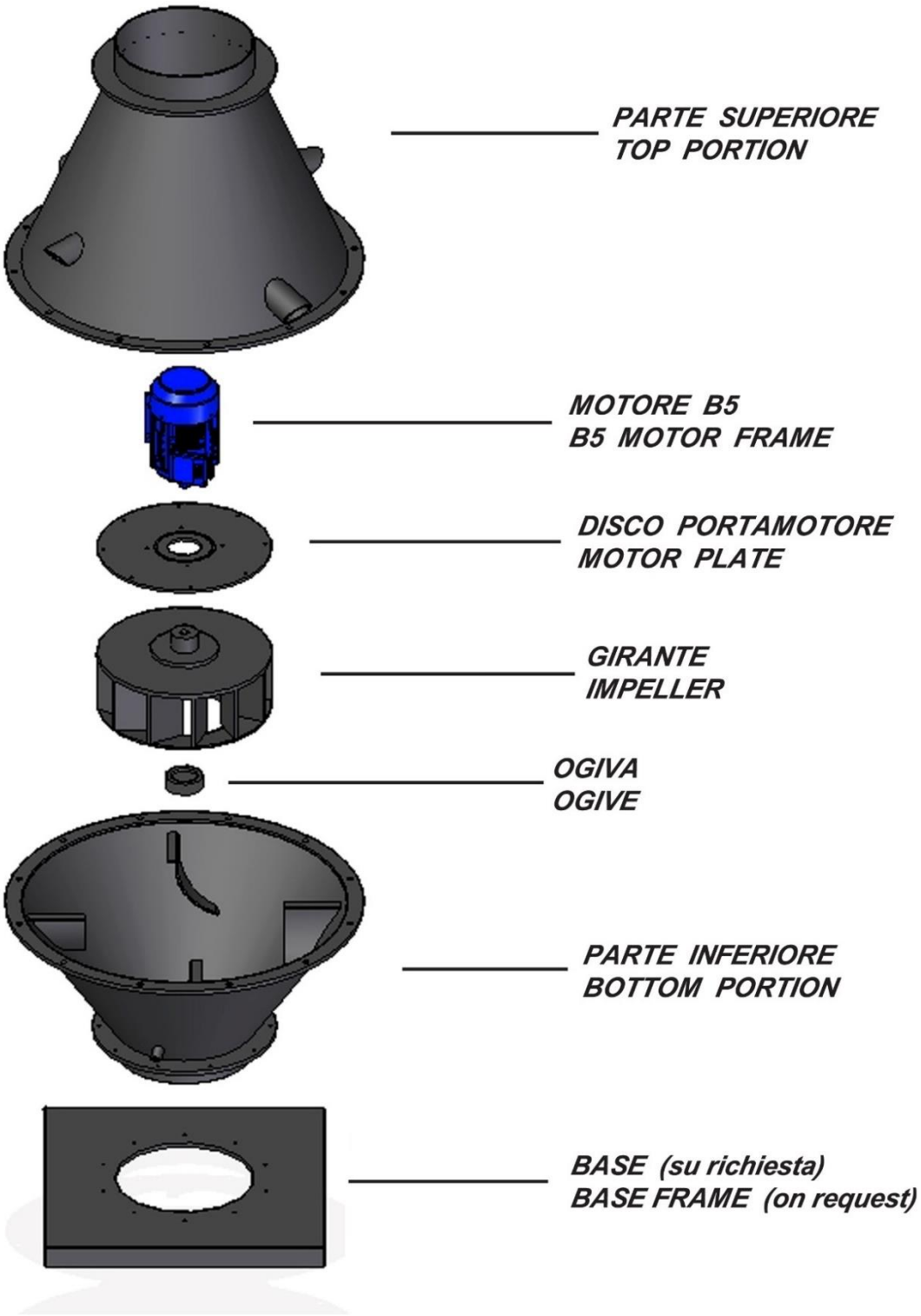


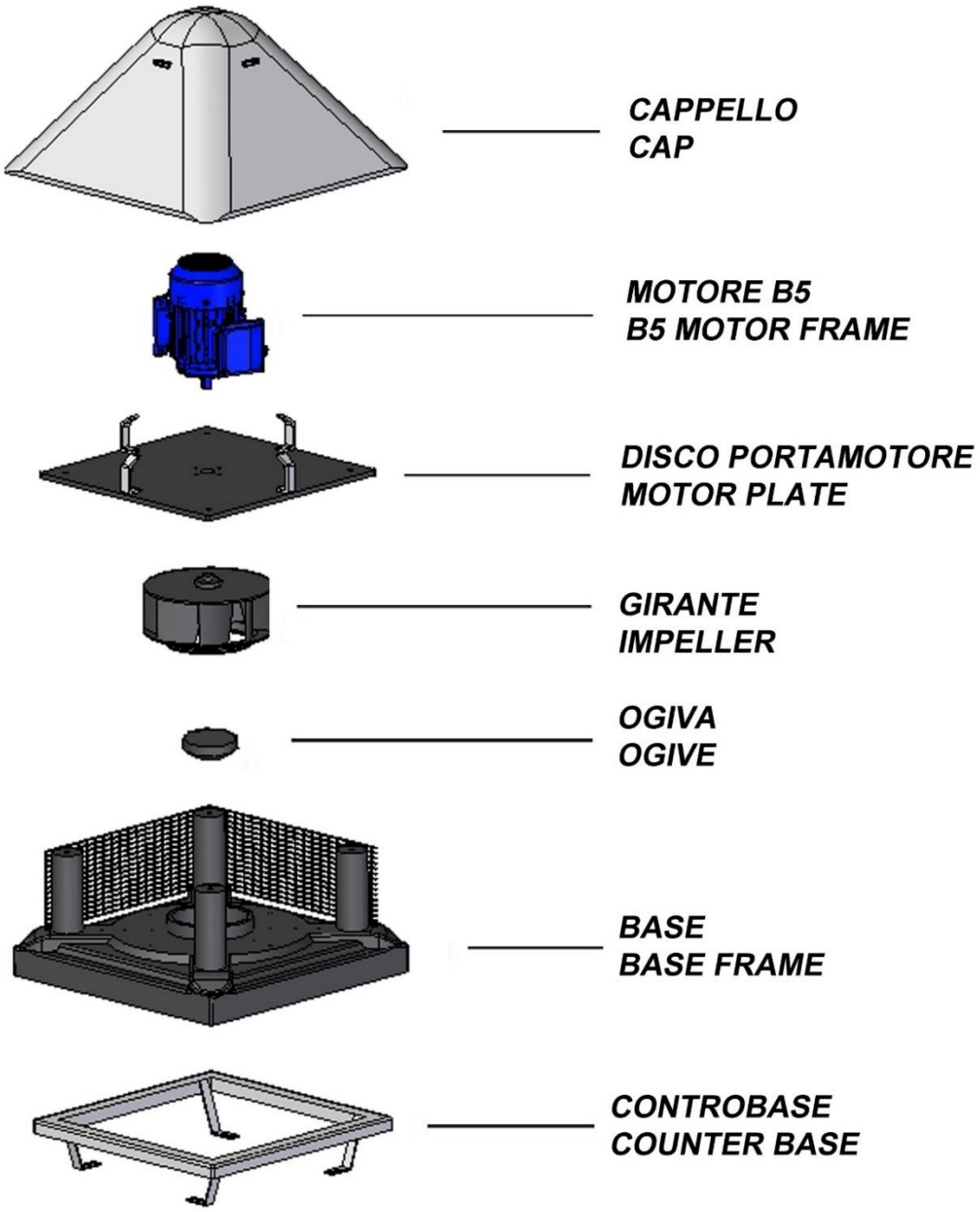




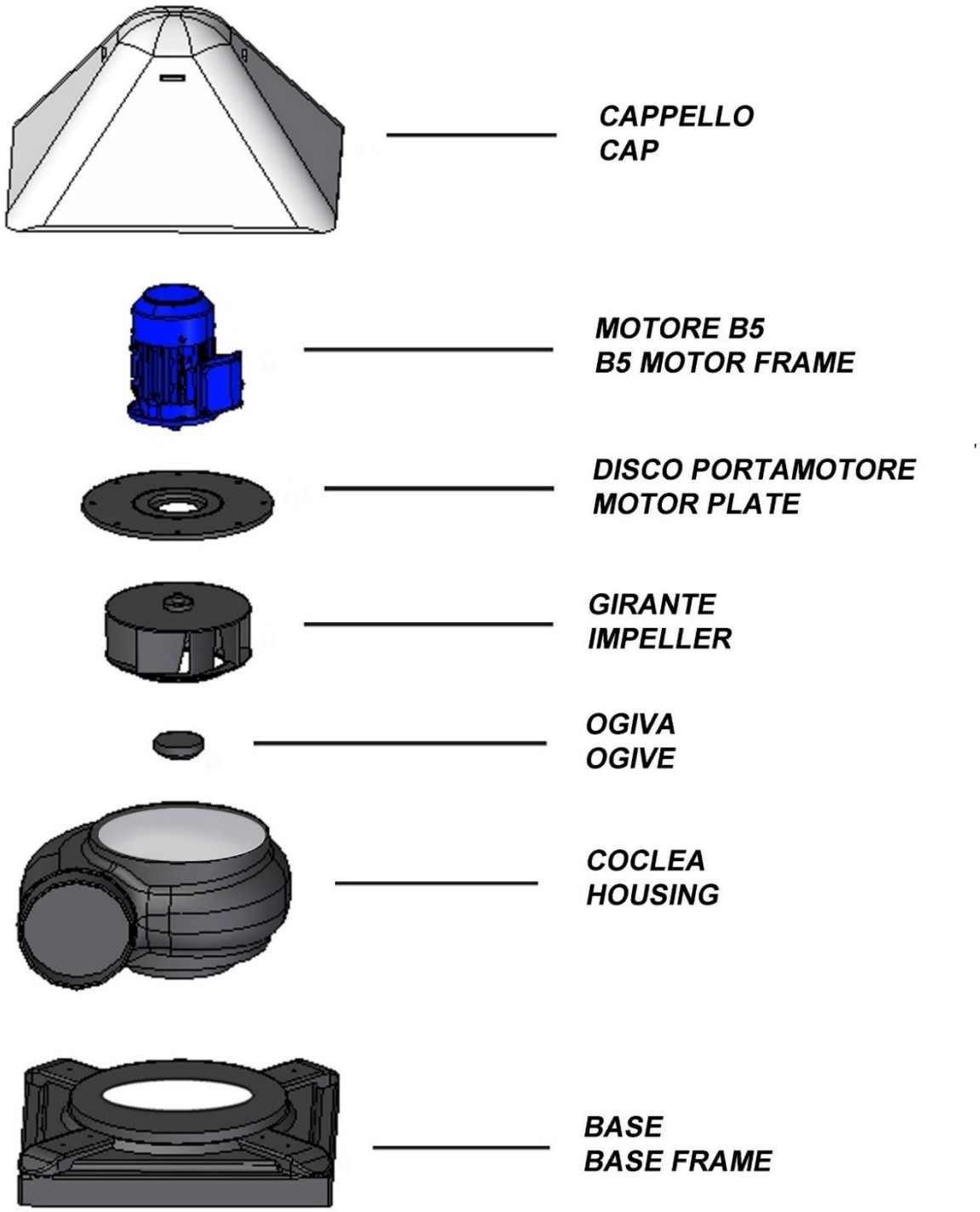

PARTE SUPERIORE
TOP PORTION
MOTORE B5
B5 MOTOR FRAME
DISCO PORTAMOTORE
MOTOR PLATE
GIRANTE
IMPELLER
OGIVA
OGIVE
PARTE INFERIORE
BOTTOM PORTION
BASE
BASE FRAME

Roof fans VN-Plastic TCV




CAPPELLO
CAP
MOTORE B5
B5 MOTOR FRAME
DISCO PORTAMOTORE
MOTOR PLATE
GIRANTE
IMPELLER
OGIVA
OGIVE
BASE
BASE FRAME
CONTROBASE
COUNTER BASE

Roof fans VN-Plastic P-CO



17.0 COMPATIBILITY CHEMICAL AGENTS

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Acetaldehyde		25	3	1	2
-water base solution	100	60	3	2	-
		100	-	-	-
		25	3	1	1
	40	60	3	2	2
		100	-	-	-
Acetic Acid		25	1	1	1
	s25	60	2	1	1
		100	-	-	1
		25	1	1	1
	30	60	2	1	1
		100	-	-	1
		25	1	1	1
	60	60	2	1	1
		100	-	-	2
		25	1	2	1
	80	60	2	3	3
		100	-	-	3
		25	2	1	1
-glacial	100	60	3	2	2
		100	-	-	3
Acetic Anhydride		25	3	2	1
	100	60	3	2	2
		100	-	-	3
Acetone		25	3	1	1
	10	60	3	-	3
		100	-	-	3
		25	3	2	1
	100	60	3	2	3
		100	-	-	3
Acetophenone		25	-	-	1
	nd	60	-	-	3
		100	-	-	-
Acrylonitrile		25	-	1	1
	technical pure	60	3	1	1
		100	-	-	-
Adipic Acid		25	1	1	1
-water base solution	sat	60	2	1	1
		100	-	-	-
Allyl Alcohol		25	2	1	1
	96	60	3	2	1
		100	-	-	1
Alum		25	1	1	1
-water base solution	dil	60	2	1	1
		100	-	-	-
		25	-	1	1
	sat	60	2	1	1
		100	-	-	-
Aluminum		25	1	1	-
-Chloride	all	60	1	1	-
		100	-	-	-
		25	1	1	-
-Fluoride	100	60	1	1	-
		100	-	-	-
		25	1	-	-
-Hydroxide	all	60	1	-	-
		100	-	-	-
		25	1	-	-
-Nitrate	nd	60	1	-	-
		100	-	-	-
		25	1	1	1
-Sulfate	deb	60	1	1	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	2
Ammonia...		25	1	1	1
-water base solution	deb	60	2	1	-
		100	-	-	-
		25	1	-	1
	sat	60	2	-	-
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
...Ammonia		25	1	1	1
-Dry Gas	100	60	1	1	1
		100	-	-	-
		25	2	1	1
-Liquid	100	60	3	1	-
		100	-	-	-
Ammonium		25	-	1	1
-Acetate	sat	60	2	1	1
		100	-	-	-
		25	1	1	1
-Carbonate	all	60	2	1	1
		100	-	-	-
		25	1	1	1
-Chloride	sat	60	1	1	1
		100	-	-	2
		25	1	1	1
-Fluoride	25	60	2	1	1
		100	-	-	-
		25	1	1	1
-Phosphate	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Hydrosulphate	dil	60	2	1	1
		100	-	-	-
		25	1	1	1
-Hydroxide	28	60	2	1	1
		100	-	-	-
		25	1	-	1
-Metaphosphate	all	60	1	-	1
		100	-	-	-
		25	1	1	1
-Nitrate	sat	60	1	1	1
		100	-	-	1
		25	1	-	1
-Persulphate	all	60	1	-	-
		100	-	-	-
		25	1	1	1
-Sulphur	deb	60	2	1	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	-
		25	1	-	1
-Triphosphate	all	60	1	-	1
		100	-	-	-
Amyl Acetate		25	3	1	2
	100	60	3	2	-
		100	-	-	-
Amyl Alcohol		25	1	1	1
	nd	60	2	1	1
		100	-	-	1
Aniline		25	3	2	1
	all	60	3	2	1
		100	-	-	-
		25	2	2	2
-Chlorhydrate	nd	60	3	2	2
		100	-	-	3
Anthraquinone Sulfonic Acid		25	1	1	1
	susp	60	2	-	1
		100	-	-	-
Aqua Regia		25	2	3	3
	100	60	2	3	3
		100	-	-	3
Arsenious Acid		25	1	1	1
	deb	60	2	1	1
		100	-	-	-
		25	1	1	1
	80	60	2	1	1
		100	-	-	2

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Barium		25	1	1	1
-Carbonate	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Chloride	10	60	1	1	1
		100	-	-	-
		25	1	1	1
-Hydroxide	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Sulfate	nd	60	1	1	1
		100	-	-	-
		25	1	-	1
-Sulphur	sat	60	1	-	-
		100	-	-	-
Beer	comm	25	1	1	-
		60	1	1	-
		100	-	-	-
Benzaldehyde	nd	25	3	2	3
		60	3	2	3
		100	-	-	-
Benzene	100	25	3	3	3
		60	3	3	3
		100	-	-	3
		25	3	-	3
-+Petrol	20/80	60	3	-	3
		100	-	-	-
	technical pure	25	3	2	1
-Chloride		60	-	-	-
		100	-	-	-
Benzoic Acid	sat	25	1	1	1
		60	2	1	1
		100	-	-	3
Benzyl Alcohol	100	25	-	1	1
		60	-	2	2
		100	-	-	-
Boric Acid	deb	25	1	1	1
		60	2	1	1
		100	-	-	1
	sat	25	1	1	1
		60	2	1	1
		100	-	-	1
Brine	comm	25	1	-	1
		60	1	-	-
		100	-	-	-
Bromic Acid	10	25	1	1	-
		60	1	1	-
		100	-	-	-
Bromine	100	25	3	3	3
-liquid		60	3	3	3
		100	-	-	3
	minim	25	2	3	3
-steam		60	-	3	3
		100	-	-	3
Butadiene	100	25	1	-	1
		60	1	3	3
		100	-	-	-
Butane Gas	10	25	1	1	1
		60	-	1	-
		100	-	-	-
Butanediol	10	25	1	-	1
		60	3	-	-
		100	-	-	-
	conc.	25	2	2	2
		60	3	3	2
		100	-	-	-
Butanone	all	25	3	1	1
		60	3	2	2
		100	-	-	-
Butyl Acetate	100	25	3	3	2
		60	3	3	3
		100	-	-	3

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Butyl Alcohol		25	1	1	1
		60	2	1	2
		100	-	-	2
Butyl Phenol	100	25	2	3	3
		60	2	3	3
		100	-	-	-
Butylene Glycol	100	25	-	1	1
		60	2	1	-
		100	-	-	-
Butyric Acid	20	25	1	1	3
		60	2	2	3
		100	-	-	3
	conc	25	3	3	3
		60	3	3	3
		100	-	-	3
Calcium	nd	25	1	1	1
-Bisulphate		60	1	1	1
		100	-	-	-
-Carbonate	all	25	1	1	1
		60	1	1	1
		100	-	-	-
-Chlorate	nd	25	1	1	1
		60	1	1	-
		100	-	-	-
-Chloride	all	25	1	1	1
		60	2	1	1
		100	-	-	2
-Hydroxide	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Hypochlorite	sat	25	-	1	1
		60	2	1	1
		100	-	-	-
-Nitrate	50	25	1	1	1
		60	1	-	-
		100	-	-	-
-Sulfate	nd	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulphur	sat	25	1	2	1
		60	1	2	-
		100	-	-	-
Carbon	100	25	1	1	1
-Dioxide Gas		60	1	1	1
		100	-	-	-
-water base solution		25	1	1	1
		60	2	1	1
		100	-	-	-
-Monoxide	100	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulphur	100	25	2	2	1
		60	3	-	3
		100	-	-	3
-Tetrachloride	100	25	2	2	3
		60	3	3	3
		100	-	-	-
Carbonic Acid	100	25	1	-	-
-dry		60	1	-	-
		100	-	-	-
-water base solution	sat	25	1	-	-
		60	1	-	-
		100	-	-	-
-damp	all	25	1	-	-
		60	1	-	-
		100	-	-	-
Chloramine	dil	25	1	1	1
-water base solution		60	-	-	-
		100	-	-	-
Chloric Acid	20	25	1	1	1
		60	2	3	3
		100	-	-	3

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Formaldehyde		25	1	1	1
		60	2	1	1
		100	-	-	-
Formic Acid	50	25	1	1	1
		60	2	1	1
		100	-	-	-
	100	25	1	1	1
		60	3	1	1
		100	-	-	-
Fruit -pulp and juice	comm	25	1	1	1
		60	1	-	1
		100	-	-	-
Gas -from exhaust acids	all	25	1	-	-
		60	1	-	-
		100	-	-	-
-with nitrous vapors	traces	25	1	1	1
		60	1	1	1
		100	-	-	-
-illuminating	100	25	1	1	1
		60	-	-	-
		100	-	-	-
Gasoline -row	100	25	1	-	1
		60	1	-	3
		100		-	-
-refined	100	25	1	-	1
		60	-	1	3
		100	-	-	-
Gelatine	100	25	1	1	1
		60	1	-	1
		100	-	-	-
Glucose	all	25	1	1	1
		60	2	1	1
		100	-	-	-
Glycerine -water base solution	all	25	1	1	1
		60	1	1	1
		100	-	-	1
Glycocoll	10	25	1	1	1
		60	1	1	1
		100	-	-	1
Glycolic Acid	37	25	1	1	1
		60	1	1	-
		100	-	-	-
Heptane	100	25	1	1	3
		60	2	3	3
		100	-	-	-
Hexafluorosilicic Acid	32	25	1	1	1
		60	1	1	1
		100	-	-	-
Hexane	100	25	1	1	1
		60	2	2	2
		100	-	-	-
Hydrobromic Acid	10	25	1	1	1
		60	2	1	1
		100	-	-	3
	48	25	1	1	1
		60	2	1	1
		100	-	-	3
Hydrochloric Acid	s25	25	1	1	1
		60	2	1	1
		100	-	-	1
	s37	25	1	1	1
		60	1	2	1
		100	-	-	2
Hydrocyanic Acid	deb	25	1	1	1
		60	1	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Hydrogen	all	25	-	-	-
		60	-	-	-
		100	-	-	-
-Peroxide	30	25	1	1	1
		60	1	1	1
		100	-	1	-
	50	25	1	2	1
		60	1	-	2
		100	-	-	-
	90	25	1	1	1
		60	1	2	2
		100	-	-	-
-dry sulphide	sat	25	1	1	1
		60	2	1	1
		100	-	-	-
-damp sulphide	sat	25	1	1	1
		60	2	1	1
		100	-	-	-
Hydrosulphite	%10	25	1	-	1
		60	2	-	1
		100	-	-	-
hydroxylamine sulphate	12	25	1	1	1
		60	1	-	1
		100	-	-	-
Hydrofluoric Acid	10	25	1	1	1
		60	2	1	1
		100	-	-	3
	60	25	2	1	1
		60	3	-	3
		100	-	-	3
Iodine -dry and damp	3	25	2	-	1
		60	3	-	-
		100	-	-	-
-iodine	3	25	2	2	1
		60	3	3	3
		100	-	-	-
Iron -Chloride	10	25	1	-	1
		60	2	-	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	1
-ferrous Chloride	sat	25	1	1	1
		60	1	1	-
		100	-	-	-
-Nitrate	nd	25	1	1	-
		60	1	1	-
		100	-	-	-
-ferric Sulfate	nd	25	1	1	1
		60	1	1	-
		100	-	-	-
-ferrous Sulfate	nd	25	1	1	1
		60	1	1	-
		100	-	-	-
Isooctane	100	25	1	2	2
		60	-	-	3
		100	-	-	-
Isopropyl Alcohol	100	25	-	-	1
		60	2	-	1
		100	-	-	-
Isopropyl Ether	100	25	2	2	2
		60	3	3	3
		100	-	-	-
Lactic Acid	<28	25	1	1	1
		60	2	1	1
		100	-	-	1
Lanolin	nd	25		1	1
		60	2	1	2
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Lead		25	1	1	1
-Acetate	sat	60	1	-	2
		100	-	-	-
-Tetra-Ethyl	100	25	1	1	1
		60	2	-	-
		100	-	-	-
Lubricating Oils	comm	25	1	3	1
		60	1	-	2
		100	-	-	-
Magnesium	all	25	1	-	1
-Carbonate		60	1	-	1
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
-Hydroxide	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Nitrate	nd	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulfate	dl	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
Maleic Acid	nd	25	1	1	1
		60	1	1	1
		100	-	-	1
Malic Acid	nd	25	1	1	1
		60	-	-	1
		100	-	-	-
Mercury	100	25	1	1	1
		60	2	1	1
		100	-	-	-
-Cyanide	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Nitrate	nd	25	1	1	1
		60	1	1	1
		100	-	-	-
Methanesulfonic Acid	50	25	1	2	2
		60	2	2	2
		100	-	-	3
	100	25	1	3	3
		60	2	3	3
		100	-	-	3
Methyl	100	25	-	-	1
-Acetate		60	-	-	1
		100	-	-	-
-Bromide	100	25	3	3	3
		60	-	-	3
		100	-	-	-
-Chloride	100	25	3	1	3
		60	3	-	3
		100	-	-	3
Methyl Alcohol	nd	25	1	1	1
		60	1	1	2
		100	-	-	2
Methylamine	32	25	2	1	1
		60	3	2	-
		100	-	-	-
Milk	100	25	1	1	1
		60	1	-	1
		100	-	-	1
Molasses	comm	25	1	1	1
		60	2	2	1
		100	-	-	2

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Naphta	100	25	2	2	1
		60	3	3	3
		100	-	-	-
	comm	25	1	-	1
		60	1	2	2
		100	-	-	-
Naphthalene	100	25	1	1	3
		60	-	2	3
		100	-	-	3
Nickel	all	25	1	1	1
-Chloride		60	1	1	1
		100	-	-	1
-Nitrate	nd	25	1	1	1
		60	1	1	1
		100	-	-	2
-Sulfate	dl	25	1	1	1
		60	1	2	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
Nitric Acid	anhyd.	25	3	-	3
		60	3	-	3
		100	-	-	3
	s20	25	1	1	1
		60	2	2	2
		100	-	-	3
	40	25	1	-	2
		60	1	2	3
		100	-	-	3
	60	25	1	3	2
		60	2	3	3
		100	-	-	3
	98	25	3	3	3
		60	3	3	3
		100	-	-	3
Nitrobenzene	all	25	3	-	1
		60	3	2	2
		100	-	-	-
Oil	100	25	1	-	1
-fuel oil		60	1	-	2
		100	-	-	-
-camphor oil	nd	25	1	3	3
		60	-	3	3
		100	-	-	-
-olive oil	comm	25	-	-	1
		60	2	3	1
		100	-	-	-
-paraffin oil	nd	25	1	-	1
		60	1	-	3
		100	-	-	-
-castornut oil	comm	25	1	-	3
		60	1	-	1
		100	-	-	-
-cottonseed oil	comm	25	1	-	1
		60	1	-	1
		100		-	-
-linseed oil	comm	25	1	-	1
		60	2	2	1
		100	-	-	-
-silicon oil	nd	25	1	1	1
		60	3	2	1
		100	-	-	-
-vaseline oil	100	25	1	1	1
		60	3	2	2
		100	-	-	-
-transformer oil	nd	25	1	1	1
		60	2	2	2
		100	-	-	-
Oleic Acid	comm	25	1	-	1
		60	1	2	2
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Oleum	nd	25	3	3	3
		60	3	3	3
		100	-	-	-
-steam	minim	25	3	-	3
		60	3	-	3
		100	-	-	-
	high	25	3	-	3
		60	3	-	3
		100	-	-	-
Oxalic Acid	10	25	1	1	1
		60	2	1	2
		100	-	-	2
	sat	25	1	1	1
		60	1	1	2
		100	-	-	3
Oxygen	all	25	1	1	3
		60	1	2	3
		100	-	-	-
Ozone	nd	25	1	2	3
		60	2	3	3
		100	-	-	-
Palmitic Acid	10	25	1	-	-
		60	1	-	3
		100	-	-	-
	70	25	1	-	-
		60	1	3	3
		100	-	-	-
Paraffin	nd	25	-	-	-
-emulsion		60	2	2	1
		100	-	-	-
	comm	25	1	2	3
		60	1	2	3
		100	-	-	-
Perchloric Acid	10	25	1	1	1
		60	2	1	1
		100	-	-	-
	70	25	1	1	1
		60	2	2	-
		100	-	-	-
Phenol	1	25	1	1	1
-water base solution		60	-	-	1
		100	-	-	3
	s90	25	2	1	1
		60	3	-	3
		100	-	-	3
Phenylhydrazine	all	25	3	2	2
		60	3	2	2
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	3	3	3
		100	-	-	-
Phosgene Gas	100	25	1	2	2
		60	2	2	2
		100	-	-	-
Phosphoric Acid	s25	25	1	1	1
		60	2	1	1
		100	-	-	1
	s50	25	1	1	1
		60	1	1	1
		100	-	-	1
	s85	25	1	1	1
		60	1	2	1
		100	-	-	1
Phosphorus	nd	25	1	1	1
-Pentoxide		60	2	1	-
		100	-	-	-
-Trichloride	100	25	3	1	1
		60	3	-	-
		100	-	-	-
Phthalic Acid	50	25	-	1	1
		60	3	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Piric Acid	1	25	1	1	1
		60	1	-	-
		100	-	-	-
	>1	25	3	1	3
		60	3	1	3
		100	-	-	-
Plating chemical solution	comm	25	1	-	-
		60	1	-	-
		100	-	-	-
Potassium	40	25	1	1	1
-Dichromate		60	1	-	-
		100	-	-	-
-Borate	sat	25	1	-	1
		60	2	-	1
		100	-	-	-
-Bromide	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Carbonate	sat	25	1	1	1
		60	1	1	-
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
-Cyanide	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Chromate	40	25	1	1	1
		60	1	1	1
		100	-	-	-
-Ferrocyanide	100	25	1	1	1
		60	1	1	1
		100	-	-	2
-Fluoride	sat	25	-	1	1
		60	-	1	1
		100	-	-	-
-Hydroxide	60	25	1	1	1
		60	2	1	1
		100	-	-	1
-Nitrate	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Perborate	all	25	1	-	1
		60	1	-	-
		100	-	-	-
-Permanganate	10	25	1	1	1
		60	1	1	2
		100	-	-	-
-Persulfate	nd	25	1	1	1
		60	2	1	1
		100	-	-	-
-Sulfate	sat	25	-	-	1
		60	1	1	1
		100	-	-	-
-Chromic Sulfate	nd	25	1	1	1
		60	2	1	1
		100	-	-	2
Propane	100	25	1	1	1
-gas		60	-	-	-
		100	-	-	-
-liquid	10	25	1	2	2
		60	-	-	-
		100	-	-	-
Propyl Alcohol	nd	25	1	1	1
		60	2	1	1
		100	-	-	-
Pyridine	nd	25	3	1	2
		60	3	2	2
		100	-	-	-
Silicic Acid	all	25	1	1	1
		60	1	1	1
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Silver		25	1	-	1
-Cyanide	all	60	1	-	1
		100	-	-	-
-Nitrate	nd	25	1	1	1
		60	2	1	1
		100	-	-	2
Sodium		25	1	1	1
-Acetate	100	60	1	1	1
		100	-	-	1
-Baking Soda	nd	25	1	1	1
		60	1	1	1
		100	-	-	1
-Bisulfite	100	25	1	1	1
		60	1	1	1
		100	-	-	2
-Bromide	sat	25	1	-	1
		60	1	-	1
		100	-	-	-
-Carbonate	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Cyanide	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Chlorate	nd	25	1	1	1
		60	2	1	-
		100	-	-	-
-Chloride	dl	25	1	1	1
		60	2	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	3
-Ferrocyanide	sat	25	1	1	-
		60	1	1	-
		100	-	-	-
-Phosphate	all	25	1	-	1
		60	1	-	1
		100	-	-	1
-triphosphate	all	25	1	1	1
		60	1	1	1
		100	-	-	1
-Fluoride	all	25	1	1	-
		60	1	1	-
		100	-	-	-
-Hydroxide	s60	25	1	1	1
		60	1	1	1
		100	-	-	1
-hypochlorite	deb	25	1	1	1
		60	2	-	2
		100	-	-	-
-Hyposulphite	nd	25	1	-	1
		60	1	-	-
		100	-	-	-
-Nitrate	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Perborate	all	25	1	-	1
		60	1	-	-
		100	-	-	-
-Sulfate	dl	25	1	-	1
		60	1	-	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulfite	sat	25	1	-	1
		60	1	-	1
		100	-	-	-
-Sulphur	dl	25	1	1	1
		60	2	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Stearic Acid		25	1		2
	100	60	1	2	2
		100	-	-	-
Sulphur		25	1	-	1
	100	60	2	-	1
		100	-	-	-
-liquid Dioxide	100	25	2	1	-
		60	3	2	-
		100	-	-	-
-dry	all	25	1	1	1
		60	1	1	1
		100	-	-	3
-water base solution	sat	25	1	1	1
		60	2	-	-
		100	-	-	-
-Trioxide	100	25	2	3	3
		60	2	3	3
		100	-	-	-
Sulphuric Acid	s10	25	1	1	1
		60	1	1	1
		100	-	-	1
	s75	25	1	1	1
		60	2	2	2
		100	-	-	2
	s90	25	1	2	1
		60	2	2	2
		100	-	-	3
	s96	25	2	2	3
		60	3	2	3
		100	-	-	3
-steaming	all	25	2	-	3
		60	3	-	3
		100	-	-	3
Sulphuric Acid +Nitric Acid +H2O	48/49/3	25	1	3	3
		60	2	3	3
		100	-	-	3
	50/50/0	25	2	3	3
		60	3	3	3
		100	-	-	3
	10/20/70	25	1	2	2
		60	1	2	2
		100	-	-	-
Tallow Emulsion	comm	25	1	1	1
		60	1	2	2
		100	-	-	-
Tannic Acid	10	25	1	1	-
		60	1	1	-
		100	-	-	-
Tartaric Acid	all	25	1	1	1
		60	2	1	1
		100	-	-	-
Tetrachloroethane	nd	25	3	2	2
		60	3	3	3
		100	-	-	-
Tetrachloroethylene	nd	25	3	2	2
		60	3	3	3
		100	-	-	-
Tetrahydrofuran	all	25	3	2	2
		60	3	3	3
		100	-	-	3
Thionyl Chloride		25	3	3	3
		60	-	-	-
		100	-	-	-
Thiophene	100	25	3	2	2
		60	3	2	3
		100	-	-	-
Tin	sat	25	1	1	1
-stannic chloride		60	1	1	1
		100	-	-	-
-stannous chloride	dl	25	1	1	1
		60	1	1	1
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Toluene	100	25	3	2	2
		60	3	3	3
		100	-	-	3
Toluic Acid	50	25	2	-	-
		60	3	-	-
		100	-	-	-
Trichloride Antimony	100	25	1	1	1
		60	1	1	1
		100	-	-	-
Trichloroacetic Acid	s50	25	1	1	1
		60	3	2	1
		100	-	-	-
Trichloroethylene	100	25	3	2	3
		60	3	2	3
		100	-	-	-
Triethanolamine	100	25	2	1	1
		60	3	-	-
		100	-	-	-
Turpentine	100	25	2	2	3
		60	2	3	3
		100	-	-	-
Urea	10	25	1	1	1
-water base solution		60	2	1	1
		100	-	-	-
	33	25	1	1	1
		60	2	1	1
		100	-	-	-
Uric Acid	10	25	1	-	-
		60	2	-	-
		100	-	-	-
Urine	nd	25	3	1	1
		60	2	1	1
		100	-	-	-
Vinyl Acetate	nd	25	3	-	-
		60	3	-	-
		100	-	-	-
Water	100	25	1	1	1
-purified		60	1	1	1
		100	-	-	1
-sea water	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-distilled	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-rain water	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-drinking water	100	25	1	1	1
		60	1	1	1
		100	-	-	1
Water base solution soap	alto	25	1	-	1
		60	2	-	-
		100	-	-	-
Whisky	comm	25	1	-	1
		60	1	-	-
		100	-	-	-
Wine	comm	25	1	1	1
		60	1	-	1
		100	-	-	-
Vinegar	comm	25	1	1	1
		60	2	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Zinc	all	25	1	-	-
-Cyanide		60	1	-	-
		100	-	-	-
-Chloride	dl	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
-Chromate	nd	25	1	-	1
		60	1	-	1
		100	-	-	-
-Nitrate	nd	25	1	-	1
		60	1	-	1
		100	-	-	-
-Sulfate	dl	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-