

This document is intended as a guide to help answer questions most often asked regarding MSA V-Gard Visors and Frames. For questions not covered in this document, please contact your MSA representative via [www.MSAsafety.com](http://www.MSAsafety.com) – selecting the appropriate region for the quickest response.

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## SECTION 1: General Questions about V-Gard Accessory System

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### 1. The new Face Protection Products are called “V-Gard Accessory System”-Why?

MSA’s new face protection product line was named to capitalize on the market-leading “V-Gard” trademark look and strong market presence. Despite the name, all V-Gard Frames work with all MSA V-Gard helmets, and all V-Gard Accessory products have been tested and approved together as a system.

### 2. What standards do the V-Gard Accessory Face Protection products meet?

All frames, visors, chinProtection and debris controls meet standards from Europe EN 166, North America ANSI/ISEA Z87.1-2010, Canada CSA Z94.3 and Australia AS/NZS 1337.

All V-Gard Visors have EN 166, ANSI/ISEA Z87.1-2010, CSA Z94.3 and AS/NZS 1337 impact ratings. There are some exceptions for CSA Z94.3, MSA will provide you details if needed.

### 3. Are there Part Numbers on the products?

Single Saleable part numbers are on all V-Gard Visors. Part numbers do not appear on the V-Gard Frames as the component parts are used on multiple frames, and having several numbers on the products create customer confusion. The part numbers also do not appear on the Chin Protection, but there are only two products which are very different in appearance and should be easily distinguishable by customers.

### 4. Are there set quantities these products must be ordered in?

Yes. There are Minimum Order Quantities (MOQs) identified on the local “V-Gard System Price List“, only the multiple of the MOQ can be ordered.

As a rule of thumb, the more costly items are packed in boxes of 5, while the less-costly are packaged in boxes of 10. This was done to ensure perfect packaging for transportation and efficient logistics.

### 5. Do V-Gard Accessories work with the frames, visors and Chin Protection in the European Sordin range?

No. These product lines are not compatible. The V-Gard line has patent-pending “V” alignment guides and three touchpoint load for easy visor installation. You will need a V-Gard Frame (if you are ordering a V-Gard Visor) or a V-Gard Visor (if they are ordering a V-Gard Frame or V-Gard Chin Protection) in order to use the new range.

## SECTION 2: Questions about V-Gard Visors

### 6. What does the markings on the visors mean?

The markings are generally found on the upper right side of the visor when the visor is facing you. As MSA visors follow global standards you will find global markings. Following an example to give you a better understanding. First marking line (in yellow) shows the visor is impact-rated to US standard ANSI/ISEA Z87.1-2010 offering maximum UV filter (U6) as indicated under the standard. The black line includes the Australian Standard AS/NZS 1337. For more details on the US, Canadian or Australian standards we can send you the US leaflet or you download it from US website.

The EN166 marking (last line) is herewith explained in more detail:

**Filter class: e.g. 2C**

2 Ultra Violet filter

2C UV filter with enhanced colour recognition

4 IR filter EN171

Welding Filters EN169 have no digit, just the scale no.see below

**Scale number: e.g. 2**

Increases with decreasing luminous transmittance of lens

1.2 74.4% - 100% (UV EN170)

1.7 43.2% - 58,1% (UV EN170)

2 29.1% - 43.2% (UV EN170)

2.5 17.8% - 29.1% (UV EN170)

4 3.2% - 8.5% (UV EN170)

4-3 8.5 - 17.8% (IR EN171)

4-5 1.2 - 3.2% (IR EN171)

3 8.5% - 17.8% (Welding - % UV % IR)

5 1.2% - 3.2% (Welding - % UV % IR)

MSA – manufacturer

1 – highest optical quality for permanent use

**Symbol for mechanical strength: e.g. BT**

“S” Increased robustness

“F” High speed particles with low energy impact (45 m/s)

“B” High speed particles with medium energy impact (120 m/s)

“T” Additional resistance at extreme temperatures (–5 and +55 °C) – optional test

**Field of use: e.g. 389** – optional tests

No Symbol: Basic Use

“3” Liquid droplets and splash

“8” Electric arc resistance

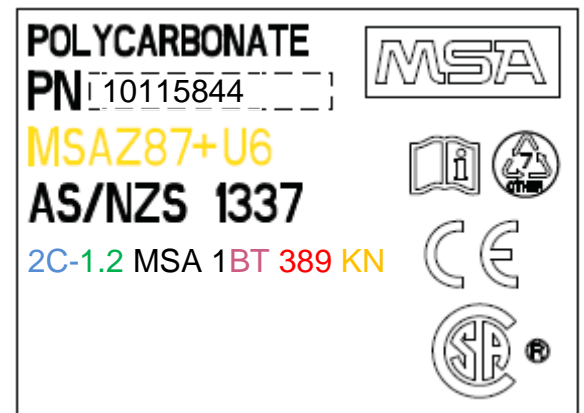
“9” Non-adherence of molten metal and resistance to penetration of hot solids

“R” Enhanced reflectance >60% in the infrared (780-2000 nm)

Optional tests:

“K” Resistance to surface damage by fine particles

“N” Resistance to fogging



**EN1731:** Accredited standard for mesh visors: Same impact option than EN166

## 7. How to clean MSA visors?

MSA recommends cleaning the visors with mild soap and water. Cleaning with high temperature water may cause warping. Do not wipe with a dry or coarse cloth, as that could cause scratching.

## 8. What does the V-Gard Visors SAP description mean?

V-Gard Visors are global products. Incorporating size dimensions was impossible due to the use of English vs. Metric measurements (only one name can be used in SAP). Instead of measurements, these abbreviations are used:

- Length = SH [8"=203mm], MED [9.25" - 9.5"= 235-241mm] and LONG [10.375"= 264mm]
- Width = RECT [16.5"=430mm], STD [17"-17.25" = 432-438mm] and EXT [17.75" - 18"= 450-457mm]
- Thickness = LTW [.04"= 1mm], THK [.06" - .07"= 1,5–1,8mm] and XTHK [.098"= 2,5mm]

## 9. Explain the difference between V-Gard moulded visors and others.

There are several significant differences between V-Gard moulded visors and others:

- V-Gard moulded visors offer superior optical quality. MSA conducts strenuous testing to ensure V-Gard Visors exceed "Optical Requirements" of ANSI/ISEA Z87.1-2010. Tests are conducted both within our own research facilities and verified/certified by third-party test facilities.
- V-Gard moulded visors are significantly thicker and thus are ideal for tough conditions and impacts, providing better high temperature resistance than flat visors
- All moulded PC visors and various 1.5mm flat visors (except the reflective, shade and arc visors), have anti-fog, anti-scratch coatings. See Question 19 for details on these coatings.
- An additional benefit of the visor thickness is their ability to hold up to many chemicals. For details please see the "MSA Chemical Application Quick Reference Guide".

## 10. What is the impact rating on V-Gard Visors?

All V-Gard Visors sold in Europe have EN 166, ANSI/ISEA Z87.1-2010, CSA Z94.3 and AS/NZS 1337 impact ratings. Concerning EN166 all are resistant to high impact 120m/s marking "B", even the Propionate visors. For visors with increased chemical resistance (e.g. Acetate, Propionate) this is not usually (in the market we see many just being resistant to impacts "F" 45m/s) so it is better to compare the product marking before buying.

## 11. Why some Visors are highlighted to be compatible for chin Protection?

Visors with the mark "compatible for chin Protection" have holes in the top for insertion into a frame, as well as holes in the bottom, for insertion into a chin protector. Sure you can use them as well without chin protector if the holes doesn't bother you. In the certificate you will see that visors have been tested with and without chin protection.

## 12. Why are the flat PC visors either blue or cloudy?

They aren't. The flat PC visors have protective film on BOTH sides to prevent scratching during shipment and storage. The film is either blue or "clear." The film from both sides of the visors should be removed prior to use.

### 13. Do V-Gard Visors have to be installed/uninstalled any particular way?

Yes. All V-Gard Visors have “V” alignment guides (patent-pending) and three touchpoint load (there are also two “passive” pins) that must be matched to those same elements on the frame.

Most of the visors are marked “1, 2 and 3” to help customers install them easily. It is best to load the visor starting with the middle (where the visors is marked “1”), and slide the visor onto the frame under the logo, working toward the outside pins on either end of the frame (lining up “2” and “3” on the visor). There should be a “snap” signifying the visor is in tightly. There are two “passive” pins on the frame, and these should automatically load into the unmarked holes on the top of the visor when working through positions 1, 2 and 3. However, customers should make sure these passive pins are completely centered in the visor holes, and also that there are no gaps between the visor and frame.

To uninstall a visor, reverse the process. Remove “3,” (on the right of the visor when in the as-worn position), remove “2” and then remove “1.” Removing “1” will require the customer to quickly and forcefully “snap” the visor out of the frame by moving the visor downward and away from the frame.

Removal of “1” may be difficult, but a tight fit in the “1” position is required to ensure the visor stays put in the event of an impact.

Please see the training video for proper visor loading and unloading.

IMPORTANT NOTE: The flat 1mm visors MUST be loaded with the dimples out. These visors have warning labels, and this is reiterated in the training videos and materials.

### 14. Do V-Gard Visors offer UV protection?

All V-Gard Polycarbonate visors, whether flat or moulded, offer UV protection. For details on UV filter marking please see question 6. Due to the material, V-Gard Visors made of propionate or mesh do not offer UV protection.

### 15. Why use a green tint V-Gard visor?

Green tint visors help alleviate eye strain and fatigue by reducing excessive glare and light transmittance. They are great for outdoor use and/or in bright-light conditions. Additionally, our green tint PC offer maximum UV protection. Green tint visors should not be used where a Shade IR visor is required.

### 16. Why some visors offer splash protection marked „3“ and others don't?

EN166 only requires the frame to be marked for splash protection. This is misleading as not all visors pass the respective test “3” from EN166 clause 7.2.4:

- Viewing area with a min. vertical centre-line depth of 15 cm when mounted
- Laser test when visor on test head turn in all directions

But the VG3 committee recently made the general agreement that “3” should also be marked on the visor especially where a frame can be fitted with a range of visors

Some MSA PC visors don't have the “3” marking even they are approved for it (see MSA certificate, technical datasheet and price list). This will be changed later on the visors itself.

## 17. Why Propionate visors are not EN166 „8“ Short-circuit Electrical Arc certified?

Even if thickness is superior than 1.4 mm, these visor don't offer a UV protection and are not compliant with the other requirement of the „8“ option: UV filter 2C-1.2.

## 18. Does MSA has a visor certified to 1000 V?

This visor is EN166, „8“ marking. See below the EN166 “8” requirements. For sure MSA visors with this marking are compliant with them:

- min. Thickness 1,4 mm
- scale number 2-1,2 or 2C-1,2 (light transmission >74.4%)

It was admitted by expert that if you are in line with these 2 conditions you can resist to such electrical conditions. See below extract from the EN166 standard, 7.2.7

„The specification of a minimum ocular thickness of 1,4mm was derived from a series of tests in Germany on a range of materials, including polycarbonate, cellulose acetate and cellulose propionate. The distance of the material under test from electric arc was a nominal 300mm and the arc conditions were as follows: Current= 12 KAm<sub>ax</sub>.

Voltage 380-400V

Frequency: 50Hz nominal

Duration: 1s max.“

So there is no reference to 1 000V in European Standard. 1 000 V standard is the one for helmets (EN50365) to prove that the helmet offers Electrical Insulation if a live parts touches the surface of the shell.

## 19. Does MSA has a visor certified to GS ET29?

GS ET 29 „Supplementary requirements for the testing and certification of face shields for electrical works“ is a german test principle issued by the Expert committee for electrical engineering. So far it is not part of the EN166, but some visor manufacturers including MSA have tested their products using this principle.

By GS ET 29 real tests have to be performed to proof resistance against electric arc and its consequences like high temperature . The most important requirements are (for details please read the GSET29 itself):

With specific measurements on the visible light transmittance three classes are possible:

Class 0: Visible light transmittance (D65)  $\geq 75\%$

Class 1: Visible light transmittance (D65)  $50\% \leq VLT (D65) < 75\%$

Class 2: Visible light transmittance (D65)  $< 50\%$

The arc resistance is tested using 2 classes=

Test class	Test current kA	Test voltage V AC	Arc duration ms
Class 1	4 $\pm$ 5%	400 $\pm$ 5%	500 $\pm$ 5%
Class 2	7 $\pm$ 5%	400 $\pm$ 5%	500 $\pm$ 5%

V-Gard frame and moulded 2.5 mm PC visors clear (10115844 & 10115853) passed arc resistance test class 1 (test with 4kA). As they are clear they belong to VLT class 0. Test Reports are available.

## 20. Are the Antifog and Antiscratch coatings of MSA visors on the inside or outside of the visor?

MSA visors use a dipping process for the coatings which allows visors to be coated on both sides uniformly. The coatings themselves are highly technical chemicals specially developed for superior quality.

## 21. In the market I found various offers for Antifog visors, sometimes with EN166 “N” marking sometimes without - What is the difference?

**The term “Antifog” is descriptive not fixed.**

The face protection mechanical properties standard EN166 includes an antifog option. In this optional test the visor must remain free from fogging for a minimum of 8 s when tested [clause 16 EN 168:2001]. A premium, robust coating is required to successfully pass the test after all the necessary conditioning.

**MSA offers several visors which have passed this intensive test and these are marked with “N” from EN166.** MSA’s AF coatings improve vision under tough conditions by preventing fogging that happens in humid conditions, helping ensure wearable comfort and compliance.

Only visors marked EN166 “N” are certified as having the required level of Antifog to meet the standard’s requirements. Some manufacturers argue to have visors with „Antifog“ properties but often they are not so performant as the requirement of the EN166 “N” option.

In MSA’s leaflets you will find the product certification markings clearly listed - this is the real certified performance- always check before you buy!

## 22. In the market I found various offers for Antiscratch visors, sometimes with EN166 “K” marking sometimes without - What is the difference?

**The term “Antiscratch” is descriptive not fixed.**

EN166 includes an optional requirement on “Resistance to surface damage by fine particles” using “K” for the product marking. Sand is used to test the robustness and light scattering is measured afterwards [clause 15 of EN 168:2001]. **MSA offers several visors which have passed this intensive test and these are marked with “K” from EN166.** They improve vision under tough conditions by preventing scratching that easily happens during the course of the work day. Additionally, this coatings extend the life and use of the visor, improving overall costs.

Only visors marked EN166 “K” are certified as having the required level of Antiscratch to meet the standard’s requirements. Some manufacturers argue to have visors with „Antiscratch“ properties but often they are not so performant as the requirement of the EN166 “K” option.

In MSA’s leaflets you will find the product certification markings clearly listed this is the real certified performance- always check before you buy!

## 23. Do V-Gard Visors hold up against chemical splash?

Yes, some V-Gard Visors perform very well against certain types of chemicals. The performance of any given visor varies based on chemical hazard, material, thickness, amount of plasticizer, coating and the environment – to name a few inputs.

MSA performed lab tests with select chemical families on certain V-Gard Visors. The results of the tests are available in the “MSA Chemical Application Quick Reference Guide”. Please refer to these materials to guide customers as to which visor may work best for their particular conditions. A representative chemical from 10 chemical families was used for the testing.

The results are intended as a guide only to help select the proper V-Gard face protection products. While the information shows the performance against certain chemicals, it is not intended to be all-inclusive, nor is such testing required by safety standards. Additionally, the performance of any product can vary based on conditions of use (such as subjection of the material to different types of heat, humidity, other chemicals, etc.).

## 24. Why doesn't MSA offer an Acetate V-Gard Visor?

There are several reasons why there aren't acetate visors in the V-Gard Accessory line:

- Acetate is a near single-source material, meaning it is highly susceptible to price fluctuations;
- While chemical resistance may be good against some materials, it is not generally used for protection against impact; and
- It is difficult to pass the optical requirements with acetate, especially since MSA does not only "self-test," but also always secures third-party verification of internal test results. MSA does not sell face protection product that do not conform to applicable standards as verified by 3rd party testing.

## 25. What are the benefits of V-Gard Reflective Elevated Temp (ET) Visors?

The primary source of infrared (IR) radiation is heat. The warmer the object, the more IR it emits. IR is found in many industrial settings, especially those with high-temperature furnaces (such as steel mills or glass manufacturing), and where lasers, arc lamps or electric radiant heaters are used. To susceptible tissues such as skin and eyes, IR can be a particularly dangerous form of non-ionizing radiation, creating a thermal effect. Skin exposed to IR provides a warning mechanism against thermal effect in the form of pain. Eyes, on the other hand, do not. Since the eye cannot detect IR, blinking or closing the eyes to help prevent or reduce damage does not happen.

The reflective coated ET V-Gard Visors help protect against long-term IR exposure by filtering out IR (clear reflective visor 10115848 has an IR transmittance of 10,61% within 780-2000nm).

Within EN166 (7.3.3), claims of "enhanced reflectance in the infrared" ("R"mark) indicate that the mean spectral reflectance of IR (i.e., the amount filtered out) is >60% (between 780nm – 2000nm). V-Gard reflective coated visors offer this reflectance and carry the "R" mark. Even though the market offers reflective coated product without the "R" mark, these products may not have been tested to any performance criteria for IR reflectance.

During evaluations, V-Gard reflective-coated visor surfaces were exposed to irradiance of 9.5kW/m<sup>2</sup>, 24 cm from heat source of 793.3°C for five minutes. The temperature in front of the visor reached 212.2°C, but behind it (near the eyes) reached ~40°C. For details please see the MSA Whitepaper.

Please note: V-Gard reflective visors are not intended for use where a Shade IR visor is required.

## 26. What is the temperature resistance of thick V-Gard PC Visors without reflective coating ?

V-Gard PC 2.5mm visors (10115853, 10115844, 10115845) are developed for heavy duty use and are thicker than most visors in the marketplace, which not only ensures impact resistance, but also reduces heat warping. They are certified for EN166 keeping impact protection at extreme temperatures +55°C and - 5°C, marking "T". They do not filter or reflect Infrared, and do not dissipate heat. These visors are not recommended for use against radiant heat hazards. For these risks please check the reflective coated visors, see previous answer.

The performance of any product can vary based on conditions of use (such as environmental chemicals, subjection of the material to different types of heat [radiant, convection, etc.]). For these reasons, MSA recommends that the proper personal protective equipment is selected for use and application by the site safety specialist, who is responsible to see that hazards, communication of instructions, precautions and limitations are conveyed and observed.



## SECTION 3: Questions about V-Gard Frames

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### 27. What does the markings on the frame mean?

It is EN166 that rules the requirements and markings of face protection. MSA V-Gard frames are approved and marked: **EN166 389 BT / EN1731-F**

**EN166:** Accredited standard face protection

#### **Field of use:**

No Symbol: Basic Use

“3” Liquid droplets and splash

“8” Electric arc resistance

“9” Non-adherence of molten metal and resistance to penetration of hot solids

#### **Symbol for mechanical strength**

“F” High speed particles with low energy impact (45 m/s)

“B” High speed particles with medium energy impact (120 m/s)

“T” Additional resistance at extreme temperatures (-5 and +55 °C)

**EN1731:** Accredited standard mesh visors: Same impact option than EN166

### 28. Can we use all the frame with all the EN certified V-Gard helmets?

Yes, all helmets V-Gard, V-Gard 200, V-Gard 500, V-Gard 520, ThermalGard are mentioned on the EN Certificate as product approved with the frames and visors.

### 29. Why doesn't MSA offer any metal V-Gard Frames?

The market experience with metal frames we used to offer in other countries in the past showed the following problems:

- metal frames should not be used where electrical hazards are present;
- metal frames are heavy; and
- metal frames encourage debris to fall in the user's face.
- metal frames often “roll off” the back of the helmet due to the spring

For environments with high temperature MSA offers V-Gard Elevated Temperature frames made of Nylon, which are US tested to withstand temperatures of 176.7°C for at least five minutes, helping to reduce warping, cracking or crazing.

### 30. Are there any metal parts on V-Gard frames?

No. There are no metal parts on any of the V-Gard Frames. This is important for applications including electrical risks.

### **31. Do V-Gard Frames hold up against chemical splash?**

MSA performed lab tests with select chemical families on certain V-Gard Visors in the "as worn" position - meaning mounted to a V-Gard standard slotted frame. The results of the tests are available in the "MSA Chemical Application Quick Reference Guide". While the frames weren't specifically tested, nothing of issue was noted regarding the frames as a result of these tests. The standard frames are made of HDPE, same as the V-Gard helmet.

### **32. What is the V-Gard debris control?**

V-Gard Debris Control is an optional, replaceable clip/rubber gasket piece that can be used on all V-Gard Frames. It helps prevent debris from falling in the user's face when the frame is both in use and in the rest position (i.e., lifted). This new feature was ranked as the #1 improvement by our customers, and comes standard on all V-Gard Frames marked "with debris control". It is also available as a replacement part. While this is a highly rated feature, there may be some customers who do not wish to use the debris control. For these customers, there are PNs for V-Gard Frames without debris control.

### **33. Will the debris control "wipe off" helmet logos?**

No. MSA Engineering has tested and found that the debris control does not "wipe off" MSA custom-placed logos. In most cases it does not cover logos, but to be sure MSA Logo Express can highlight debris control position within the logo validation form.

### **34. Do V-Gard Frames have a space between the brim of the helmet, allowing sparks or debris to fall behind the visor?**

V-Gard Frames for Helmets have all been designed to work with or without the optional, replaceable debris control. With the debris control in place, the likelihood that debris will fall between the frame and the helmet brim is limited (we have conducted tests against such incidents). However, a customer can choose to wear V-Gard Frames without debris control. In these cases, it is possible that debris can fall between the frame and helmet brim when the frame is in the rest position but limited risk thanks to sliding rails to adjust the wearing depth close to the helmet peak.

### **35. What is the temperature to which the ET frames are tested?**

The ET frames were tested withstand temperatures of 176.7°C for at least five minutes, helping to reduce warping, cracking or crazing. This is almost the temperature our ThermalGard helmet is tested withstanding +150°C according to EN397.

### **36. Can the debris control be used in a hot environment?**

As documented in the EN Certificate the debris control was part of all the tests. That means frames and visors passing the EN 166 molten metal tests with the marking "9" could also use the debris control without restrictions. The debris control itself doesn't have the marking "9" as the EN166 doesn't consider this option, anyway this is not relevant as it will be used always in combination with the frames and visors. During high temperature testing of the V-Gard Elevated Temperature frame the debris control was also mounted and showed NO deformation etc. resisting temperatures of 176.7°C for at least five minutes.

### **37. What are the hooks on the rails of the V-Gard Frame for slotted helmets for?**

The hooks serve as "speed bumps" to help prevent the frame from coming completely out of the slot adaptors when pulled out very far, such as when the user has pulled the frame out to accommodate a respirator.

### **38. What is the interest to select a Universal Frame instead of a Standard One?**

When the customer wants to keep the competitive pairs of ear-muffs on our V-Gard Helmet, the frame will let the slots free for these ear-muffs. So Universal frames allow use of competitive ear-muffs with V-Gard helmets, frames and visors. MSA recommends to use MSA Head-, Face, Hearing-Protection system, as everything has been tested and approved as a system.

### **39. Do we need to order slot adapters when no need of ear-muffs?**

No the slot adapter are delivered with each frame so no need to order them separately like with the previous Sordin range.

## SECTION 4: Questions about V-Gard Chin Protection

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### 40. What are V-Gard Chin Protection made of?

The V-Gard Retractable Chin protector (PN10115828) is made of Lexan 141, a polycarbonate, thermoplastic resin. The V-Gard Standard Chin protector (PN10115827) is made of Tenite, a cellulosic plastic.

### 41. Is there a clear V-Gard Chin Protector?

No. The opaque material ensures safety and standards compliance with clear, tinted and shaded V-Gard Visors. By EN166 chin protector for shaded visors should have a light transmission of 0%, which is not possible with clear chin protector.

MSA is reviewing the feasibility of offering a clear chin protector for just clear visors in the future.

## SECTION 5: Other Questions on V-Gard Accessories, Other PPE, Specific Uses

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### 42. Are V-Gard frames & visors antistatic?

The whole V-Gard System including helmets, frames, visors and many other accessories were tested according to EN13463-1 standard “Non-electrical equipment for use in potentially explosive atmospheres”. The objective is the examination according to the standard EN 13463-1, of the capacity in the storage and in the flow of the electrostatic charges of covers or parts of plastic envelope for the material to be tested. This type of material must be conceived in order to avoid any danger of inflammation by electrostatic discharge in the normal conditions of use.

See below the ATEX areas in which the MSA V-Gard Accessory System can be safe:

#### Face Protection

10115836 Dust  
10115840 Dust  
10115853 Dust and IIA  
10115855 Dust

#### Chin Protection

10115828 Dust and IIA  
10115827 Dust and IIA

MSA can send you the test report to proof this.

As it is not required in the norms for non-electrical PPE NO Antistatic marking on frames or visors are used.

### 43. Do V-Gard Accessories work with competitor frames, visors and chin protection?

No. Competitor products will not work with our new V-Gard Accessory System line. We have patents protecting our designs; “knock offs” will be difficult to produce and sell into the market.

More importantly, it is unsafe to wear competitor products on MSA equipment, as competitor combinations with MSA equipment have not been tested to ensure compliance with safety standards. Even if competitor visors and frames may appear to be compatible with MSA products, only V-Gard Accessory products are tested and approved as a system to work together as a system and with MSA Helmets.

### 44. Why MSA recommends the use of safety eyewear under visors?

MSA recommends wearing MSA impact-rated spectacles or goggles under all visors because MSA has no way of knowing what type or model visor the customer is wearing, whether or not it meets general protector or impact requirements. As explained in previous questions/answers above all MSA V-Gard visors are impact resistant to minimum 120m/s “B” (EN166 tested), various even impact rated at extreme temperatures “T”. It is up to customers individual risk analysis to decide if spectacles/goggles should be worn underneath in addition.

#### 45. Which V-Gard Accessories are compatible with which?

- All V-Gard Frames are compatible with all V-Gard Visors.
- All V-Gard Visors for Chin Protectors – also called Nitrometers (i.e., connections in both the bottom and top of visor) are compatible with all V-Gard Chin Protectors.
- All V-Gard Frames for Slotted Helmets are compatible with all MSA Slotted Helmets. (MSA recommends the use of the debris control when also wearing both helmet-mounted muffs and V-Gard moulded visors.)
- All V-Gard Universal Frames for Helmets are compatible with all MSA helmets. As in Europe MSA offers slotted helmets only we recommend to use Frames for Slotted Helmets as this combination is ideal.
- All V-Gard Frames are compatible with MSA helmet-mounted earmuffs, such as the left/RIGHT and Classic (HPE, EXC, XLS) lines. For additional details on compatibility with earmuffs, please ask MSA sales representative.
- V-Gard Frames will close and can be used with many half-masks like MSA Advantage 400.

IMPORTANT NOTE: While competitors' visors and frames may appear to be compatible with MSA products, only V-Gard Accessory products are tested and approved as a system to work with MSA Helmets.

Subject to change without notice. Rev01, June 2014