The Safety Company

JUNE
2013

V-Gard® System Frequently Asked Questions

This document is intended as a guide to help answer questions most often asked regarding MSA V-Gard System products, standards, integration with other personal protective equipment, and face protection (in general).

ID # 0670-001/JUNE 2013

Table of Contents

SECTION 1: Questions about V-Gard Accessory System

1. ***Why are MSA face protection products called "V-Gard Accessory System?"***
   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 for Caps work with all MSA caps, all V-Gard Frames for hats work with all MSA hats, and all V-Gard Accessory products have been tested and approved together as a system to work with MSA Helmets.

2. ***What standards do the V-Gard Accessory Face Protection products meet?***
   - All frames meet ANSI/ISEA Z87.1-2010, EN 166, CSA Z94.3 and AS/NZS 1337.
   - All V-Gard Visors, EXCEPT those listed below have ANSI/ISEA Z87.1-2010, EN 166, CSA Z94.3 and AS/NZS 1337 impact ratings.
     - Flat PC visors (PNs 10117750, 10117781, 10117782, 10117783 and 10118094 ONLY) meet all standards, **EXCEPT** CSA Z94.3.
     - Mesh visors meet the general protector requirements of ANSI/ISEA Z87.1-2010, EN 166 and AS/NZS 1337. CSA Z94.3 does not offer approval for mesh visors due to optical clarity requirements that cannot be met by mesh. (In fact, 3M pulled a "CSA compliant" visor off of the market for this reason.)
     - Green propionate visors meet impact requirements for ANSI/ISEA Z87.1-2010 and CSA Z94.3; they do not meet any requirements for EN 166 or AS/NZS 1337.
     - Arc visors (PN 10118489 and 10115847) meet ANSI/ISEA Z87.1-2010 only.

     NOTE: EN166 medium impact velocity, which V-Gard Visors are marked to, is nearly 32% faster than ANSI/ISEA Z87.1-2010. Even our propionate visors are EN 166 impact rated – a significant improvement over previous products.

3. ***Does MSHA accept ANSI/ISEA Z87.1-2010 standards for visors?***
   The U.S. Labor Department's Mine Safety and Health Administration (MSHA) agency develops and enforces safety and health rules applying to all U.S. MSHA works cooperatively with industry, labor, and other Federal and state agencies toward improving safety and health conditions for all miners.

   Additionally, Federal legal requirements, such as the OSH Act 29 CFR 1-3058 apply to mines. ANSI Z87 is the referenced standard for eye/face protection within this regulation.

4. ***How does MSA test V-Gard System Products?***
   MSA tests all products both internally and externally through certified, third-party test labs. Specifically, these labs were used:

   - Intertek (ANSI/ISEA Z87.1-2010)
   - INSPEC International Ltd. (EN166)
   - CSA International (CSA Z94.3)
   - SAI Global Ltd. (AS/NZS 1337)
   - The arc visors were also tested by Arcwear, Inc. for arc ratings.

5. *Are there PNs 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 can create customer confusion. The part numbers on the Chin Protectors also do not appear, but there are only two products, and since they are very different in appearance, customers should be able to easily distinguish between the two.

6. *Will the V-Gard Accessory System replace the Defender® face protection line?*

Yes. Once the entire V-Gard Accessory System of face protection products (including V-Gard Headgear available late 2013) is launched, the Defender line will be entirely eliminated (on a global basis). This will not occur until December 2013, at the earliest.

7. *What is the Phase Out plan for Defender face protection products?*

Most Defender face protection products will not be discontinued until December 2013 or no less than six months after V-Gard Headgear is launched, whichever is later. Please see Questions 8 and 9 for a list of Defender products that will be discontinued in 2013 and 2014, respectively. Several slow-moving Defender face protection products were discontinued in 2011-2012.

8. *Which Defender products will remain active through 2013?*

The following Defender face protection products will remain active until at least December 2013:

Defender PN	Defender Description
457409	SCREEN ASSY.UNIV.HAT
488131	PC VISOR, CLEAR, 7.88 X 15.76 X .04
488131	VISOR,POLYCARB,CLR FORMED,8X16X.040
491908	VISOR,6IN.060 POLYCAR,CLR
494916	VISOR,NITROMETER,CLR POLY,FOG FREE,8X19
802337	VISOR 8IN, COATED
10005383	PLASTIC UNIVERSAL FOR HATS
10005879	VISOR,PLASTIC,POLYCARB,GOLD COATED,CLEAR
10005881	SHADE 5 NITROMETER VISOR; 6.5 X 15.5 X .06
10021611	DEFENDER HEADGEAR, WITH RATCHET CLOSURE
10021612	DEFENDER HEADGEAR, ET, W/ RATCHET CLOSURE
10021614	DEFENDER + FRAME WITH LOCKDOWN
10021616	DEFENDER + FRAME WITHOUT LOCKDOWN
10022241	CHINGUARD,CLEAR,POLYCARBONATE
10031191	TEMGARD DEFENDER + FRAME WITH LOCKDOWN
10031191	TEMGARD DEFENDER + FRAME WITH LOCKDOWN
10063106	VISOR,POLYCB.,9 1/2 X 19 1/2 X .070, CLR
10063107	VISOR, ARC, 7 1/4 X 20 1/2 X .070, MD. GRN.
10086996	SHADE 3 VISOR, 8 X 15.5 X .06
10109107	VISOR,PLASTIC,PROPIONATE,CLEAR
10109109	VISOR, PLASTIC, PROPIONATE, DARK GREEN
10109113	VISOR, PLASTIC, PROPIONATE, DARK GREEN

9. Which Defender products will remain active in 2014?

The following Defender face protection products will remain active into 2014. The discontinuation date of these products has yet to be determined, based on the launch of replacement products:

Defender PN	Defender Description
456568	SPARKGARD ONLY
488132	PC VISOR, CLEAR, 7.88 X 15.76 X .06
488138	VISOR,POLYCARB,CLR FORMED,9.47X18.94X.06
488159	METAL UNIVERSAL FRAME (FOR HATS)
488160	METAL UNIVERSAL FRAME (FOR CAP)
10005880	VISOR,PLASTIC,POLYC,GOLD COATED,MED. GRN
10005882	SHADE 5 VISOR, 8 X 15.5 X .06
10017934	VISOR,PLASTIC,POLYCB,8 X 15 1/2 X .04 TK
10037098	DEFENDER + FRAME (INSTANT RELEASE, W/O LOCKDOWN)
10079072	METAL FRAME (FOR SKULLGARD CAP)

10. How will customers know which Defender products are being discontinued?

MSA will mark all "to be discontinued" items as such on our website; additionally, a link to the document, "V-Gard System Conversion Chart for Defender Phase Out (May 2013)" will be posted on the applicable industrial Defender product pages.

11. Does MSA offer V-Gard Accessory System product "kits"?

Yes. There are four V-Gard Accessory kits available:

A) KIT, V-GARD FRAME, FOR SLOTTED CAPS WITH CLEAR PC VISOR/WHITE V-GARD CAP (PN 10118695). Contains:

- White V-Gard Cap with ratchet suspension (PN 475358)
- V-Gard Frame for Slotted Caps (PN 10115730)
- V-Gard Clear, PC Visor, 8" (20.3 cm) x 17" (43.2 cm) x .04" (1.02 mm) (PN 10115836)

B) KIT, V-GARD FRAME, UNIVERSAL WITH CLEAR PC VISOR (PN 10118697). Contains:

- V-Gard Universal Frame for Caps (PN 10115822)
- V-Gard Clear, PC Visor, 8"x 17"x .04" (PN 10115836)

C) KIT, V-GARD FORESTRY (PN 10118694) contains:

- Hi-viz orange V-Gard Cap with ratchet suspension (PN 488146)
- V-Gard Frame for Slotted Caps (PN 10115730)
- V-Gard Mesh Nitrometer with Plastic Edge (PN 10116558); 8x17
- V-Gard Retractable Chin Protector (PN 10115828)
- left/RIGHT™, HIGH (NRR 28 db) Cap-Mounted Earmuffs (PN 10087422)

D) KIT, V-GARD ARC (PN 10118696). Contains:

- White V-Gard Cap with ratchet suspension (PN 475358)
- V-Gard Frame for Slotted Caps (PN 10115730)
- V-Gard Arc Nitrometer w/ V-Gard Standard Chin Protector (PN 10118480)

12. Are there minimum quantities required when ordering these products?

Yes. There are Minimum Order Quantities (MOQs). The MOQs are identified on the "*V-Gard Accessory System Price List*" (ID 0670-003-MC), "*V-Gard Accessory System Product Information Template"* and *"V-Gard Product Cross-Reference."*

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 help ensure smaller inventories and higher Gross Margin Return on Investment (GMROI) for our customers.

SECTION 2: Questions about V-Gard Visors

13. How many V-Gard Visors are there?

In total, there are 35 V-Gard Visors, most of which will have global approvals. They are classified by "use environment." Please refer to the *"V-Gard Accessory System"* brochure (ID 0670-000-MC), *"V-Gard Visor Comparison"* chart (ID 0670-004-MC), and the "Above-the-Neck" catalog (ID0600-53-MC) for details on specific visors.

14. Explain the difference between V-Gard molded visors and others.

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

- V-Gard molded 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. For additional details, please refer to the "Optical Requirements and V-Gard Visors" (ID 03-02-32-MC, available on the MSA asset library).
- All molded PC visors, except the reflective, shade and arc visors, now have anti-fog, anti-scratch coatings. See Questions 27, 30 and 31 for details on these coatings.
- V-Gard molded visors are significantly thicker than our previous molded visors. This change allows these visors, including those made of propionate, to pass not only the ANSI/ISEA Z87.1-2010high velocity and mass impact tests, but also EN166 impact tests where a steel ball is hurled at 120m/s – nearly 32% faster than ANSI/ISEA Z87.1-2010.

An additional benefit of the visor thickness is their ability to hold up to many chemicals. See the "MSA Chemical Application Quick Reference Guide," and Question 32, below, for details on chemical resistance.

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

All V-Gard Visors, EXCEPT the mesh visors (plastic or aluminum-edged) are marked with a Z87+ marking, meaning they are impact rated. Many are also marked with an EN166 "B" mark for medium impact velocity. Visors with an EN166 "B" were hit with a missile nearly 32% faster than ANSI/ISEA Z87.1-2010. Even our propionate visors are ANSI and EN impact rated – a significant improvement over previous products.

16. What is the difference between an Impact-Rated and a General Protector?

Some personal protective equipment (PPE) users mistakenly believe that if an eye or face protector has a "Z87" mark, it also has an impact rating. This is not the case.

Under ANSI/ISEA Z87.1-2010 (the "Standard"), there are two types of protectors: general and impact-rated:

- General protectors do not provide impact protection because they do not pass the impact requirements outlined in the Standard. General protectors are marked with "Z87" only.
- Impact-rated protectors pass the impact requirements and are marked Z87+, with the "+" designating an impact-rating.

Additionally, under the Standard, users can (and should) request proof of impact claims from the manufacturer making such a claim. Please refer to the customer letter on iClic that offers a general statement about our visors and impact ratings.

17. 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. For visors with a round hole in position "1," 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.

For visors with a "keyhole" in position "1," it is better to start at either position "2" or "3" to get the visor in place easily, working around the visor inserting along the way.

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 direct customers to the MSA-U training video for proper visor loading and unloading.

IMPORTANT NOTE: The .04" (LTW) visors MUST be loaded with the dimples out. These visors have warning labels, and this is reiterated in the training videos and materials.

18. What is a Nitrometer?

A nitrometer is a visor with holes in the top for insertion into a frame, as well as holes in the bottom, for insertion into a chin protector.

19. Why are V-Gard Nitrometers longer than Defender Nitrometers?

The V-Gard Nitrometers, unlike Defender face protection products, offer global approvals. Under those standards, in particular EN166, the coverage requirements are more extensive and longer/wider visors was needed to pass these test requirements.

A shorter, clear V-Gard Nitrometer is currently being tested to ANSI and CSA standards so it can be launched in the US/CAN markets.

20. Why are the flat or contoured PC visors green, 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.

21. What is the difference between PC side-contoured visors and PC flat?

The PC visors with side-contours were launched in 2012 (PNs 10115836, 10115837, 10115639, 10115840, 10115841, 10115842, 10115843, 10115863 and 10120108). They have sides that are contoured towards the face for a closer fit and improved resistance to impact and splash hazards. The shape still accommodates helmet-mounted earmuffs. This change was necessary to pass EN 166. These visors are impact rated under ANSI/ISEA Z87.1-2010, EN166, AS/NZS 1337 and CSA Z94.3.

The flat PC visors launched in 2011 (PNs 10117750, 10117781, 10117782, 10117783, and 10118094) are completely flat and offer the same approvals as the flat visors, except CSA Z94.3.

These visors are the same price.

22. Does MSA offer a bulk pack of visors?

Yes! MSA offers a 20-pack of visors (PN 10120108). The visors within the pack are equivalent to PN10115836, except they are not individually bar-coded. The price of the 20-pack is lower than buying the individual bar-coded visors (offered only in boxes of 10).

23. Do V-Gard Visors offer UV protection?

Yes. Standard clear or tinted V-Gard PC Visors, whether flat or molded, offer UV protection up to "U6"level (highest level measurable in ANSI/ISEA Z87.1-2010). Additionally, green tinted propionate molded visors offer a U6 level and are marked as such.

Of the Specialty molded visors (shades, arc and reflective), only reflective-coated has been tested for UV, and these also offer the ANSI/ISEA Z87.1-2010 "U6" mark. However, as a result of securing a Z87 "W" mark, V-Gard Shade visors also provide protection against far UV based on their shade designation and the ANSI/ISEA Z87.1-2010 requirements for that shade.

Due to the material, V-Gard Visors made of clear propionate or mesh (of any type) do not offer UV protection.

24. Do V-Gard Visors offer blue light protection?

No. Blue light is visible light with wavelengths in the 500nm to ~381nm range (adjacent to UV on the electromagnetic spectrum). Blue light wavelengths are longer than UV, and high illumination levels of blue light have been shown to cause irreversible cell damage in some individuals. People are exposed to blue light naturally through computers, televisions and cell phones. Industrial uses include lasers and medical diagnostic equipment. A person who needs protection from blue light should secure a lens known as a "blue blocker."

25. 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 and propionate visors offer maximum UV protection, as indicated in the ANSI/ISEA Z87.1-2010 standard; they are marked “U6” as a result. **Green tint visors should <u>not</u> be used where a Shade IR visor is required.**

26. Explain the difference between V-Gard Shade and Defender Shade Visors.

- The new V-Gard Shade Visors offer these improvements over the Defender Shade Visors:They are now made of PC;
- They are impact rated to ANSI/ISEA Z87.1-2010, CSA Z94.3 & EN 166;
- They are both wider and thicker (1.75" and 0.01", respectively); and
- They are now molded (not formed) for superior optics.

27. How do I clean V-Gard Visors?

Clean V-Gard 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.

28. Does MSA offer visors with anti-fog/anti-scratch (AF/AS) properties?

MSA offers several V-Gard PC visors coated with AF/AS. The contoured visors offered a non-EN rated AF/AS to keep the cost on these visors low. The V-Gard molded PC visors offer AF/AS which pass EN tests for resistance to distorted vision due to lens fogging, and surface damage by fine particles, respectively.

ANSI/ISEAZ87.1-2010 and CSA Z94.3 do not specify either a test methodology or marking indication, so when a manufacturer claims AF/AS, under either of these standards so there is no performance criteria and thus, no true basis for comparison or claims substantiation.

29. Do all MSA visors offer EN-rated AF/AS?

No. V-Gard PC contoured visors meet all requirements for ANSI/ISEA Z87.1-2010, but they do not have an approval for EN166, including “K” and “N” marks for AF/AS.

30. What is special about the EN-rated anti-scratch coating (AS)?

EN tests for AS are particularly difficult to pass. V-Gard molded visors with AS have secured EN markings (“K” for scratch resistance). To secure a “K” marking, two clean visor samples are rotated on a plate while 6.6 lbs (+ 0.11 lb) of natural quartz sand is dropped from a gravity fed tube nearly 5 ft tall. Once the test is complete, the samples are cleaned and the measured light transmission must remain within tolerance.

MSA’s AS coatings improve vision under tough conditions by preventing scratching that easily happens during the course of the work day. Additionally, AS coatings extend the life and use of the visor, improving overall costs.

31. What is special about the EN-rated anti-fog coating (AF)?

EN tests for AF are particularly difficult to pass. V-Gard molded visors with AF have secured EN markings (“N” for anti-fog). To secure an “N” marking, four (4) water, air and relative humidity-conditioned visor samples are subjected to water vapor (steam). The time required for the light transmission levels to drop to 80% of the unfogged baseline is measured, and visors must remain fog-free for a minimum of eight (8) seconds.

MSA's AF coatings improve vision under tough conditions by preventing fogging that happens in humid conditions, helping ensure wearable comfort and compliance.

32. 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 *"V-Gard Accessory System"* brochure (ID 0670-000-MC), and in the "*MSA Chemical Application Quick Reference Guide*" (ID 0670-007-MC). Please refer to these materials to guide customers as to which visor may work best for their particular conditions. There are 10 chemical families listed on the Guide. A representative chemical from each family was used for the testing. If your customer has a question about a particular chemical that does not appear on the chart, MSA can provide guidance based on the family a given chemical falls under. Please contact the Helmet Accessory Product Line Manager for help.

33. Do results on the Chemical Application chart reflect every environment?

No. Our 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.).

For these reasons, MSA recommends:

- The proper PPE should be selected for use and application by the site safety specialist, whose responsibility it is that hazards, communication of instructions, precautions, and limitations are conveyed and observed.
- Eye protection, such as MSA safety spectacles or goggles, as required for the application which meets the appropriate impact requirements, should be worn under any visor.
- Inspect visors frequently, and replace them immediately if worn, scratched, or damaged in any way.
- Use only MSA frames with MSA visors, and vice-versa. Incompatible products may not function as intended

Please contact MSA Customer Service for questions about a particular chemical that does not appear on the chart. MSA and the Helmet Accessory Product Line Manager can provide additional guidance based on the family a given chemical belongs to. It is also a good idea to secure a free sample of each identified visor to review the productsvia the "Try It!" Program. Only an MSA sales representative can secure free products through this program.

34. Why use a V-Gard propionate molded visor?

V-Gard molded propionate visors are thicker than all other propionate visors in the market. This additional thickness afforded an ANSI/ISEA Z87.1-2010 impact rating (as well as an EN 166 medium velocity mark) – making it one of the only propionate visors available for impact protection.

V-Gard propionate molded visors also offer resistance to chemical splash, performing well against many types of chemicals. For details, please refer to the "*MSA Chemical Application Quick Reference Guide*" (ID 0670-007-MC).

V-Gard Propionate molded visors offer superior optical quality, decreasing the number of issues caused by visual strain. Please refer to our white paper, "*Optical Quality Requirements and V-Gard Visors*" (ID 0302-32-MC /April 2012). Feel free to share the white paper with both end user customers and channel partners.

Finally, our green tint PC and propionate visors also offer maximum UV protection, as indicated in the ANSI/ISEA Z87.1-2010 standard; they are marked "U6" as a result.

35. 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 third party testing.

36. Why doesn't MSA offer a PETG V-Gard Visor?

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

- While PETG may offer chemical resistance against some materials, it is not generally used for protection against impact; and
- It is difficult to pass the optical requirements with PETG; there is essentially one global source of optically correct PETG. They have informed MSA that they will no longer manufacture optically correct PETG. Since MSA not only "self-tests," but also always secures third-party verification of our internal test results, this material would not likely pass ANSI/ISEA Z87.1-2010 optics requirements. MSA does not sell face protection product that do not conform to applicable standards as verified by third party testing.

37. How are V-Gard Arc Visors tested?

To secure published calorie ratings, V-Gard Arc Visors are tested to ASTM F2178-2008 (Standard Test Method for Determining the Arc Rating and Standard Specification for Face Protective Products); ref NFPA 70E-2009 Hazard Risk Category 2.

This test method measures the arc rating and specifies the requirements for products intended for use as eye or face protection for workers exposed to electric arcs that would generate heat flux values from 84 to 25 120 kW/m2 [2 to 600 cal/cm^2]. Products are tested as sold. This test method measures and describes the properties of materials, products, or assemblies in response to convective and radiant energy generated by an electric arc under controlled laboratory conditions; it does not predict damage from light other than the thermal aspects measured.

V-Gard Arc Visors are also tested to ANSI/ISEA Z87.1-2010 and meet impact requirements.

38. Do I have to wear the V-Gard Arc Nitrometer with a chin protector?

Yes. MSA did not test the V-Gard Arc Nitrometer without a V-Gard Chin Protector, so we have no way of knowing its performance without it. (**PLEASE NOTE**: PN 10118480 is shipped unassembled. The customer is required to place the chin protector on the nitrometer prior to use.)

The V-Gard Arc Nitrometer is rated to 11.3 cal/cm^2 when tested to ASTM F2178-2008 (ref. NFPA 70E-2012, Hazard Risk Category 2), and when worn with a V-Gard Protective Cap (PN 475358), V-Gard Frame (PN 10121266) and V-Gard Standard Chin Protector (PN/10115827).

MSA also offers an Arc Visor (PN 10115847) with a higher calorie rating, that does not require a V-Gard Chin Protector to achieve published calorie ratings.

MSA Customer Service should contact the Helmet Accessory Product Line Manager for protection levels when using this V-Gard Arc Nitrometer with V-Gard Frames, V-Gard Chin Protectors and MSA Helmet combinations other than what is listed in the product literature.

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39. What are the calorie ratings on V-Gard Arc face protection?

The V-Gard Arc Nitrometer is rated to 11.3 cal/cm^2 when tested to ASTM F2178-2008 (ref. NFPA 70E-2012, Hazard Risk Category 2), and when worn with a V-Gard Protective Cap (PN 475358), V-Gard Frame (PN 10121266), and V-Gard Standard Chin Protector (PN/10115827).

The V-Gard Arc Visor is rated to 12.9 cal/cm2 when tested to ASTM F2178-2008 (ref. NFPA 70E-2012, Hazard Risk Category 2) when worn with a V-Gard Hard Hat (PN 475358) and V-Gard Frame (PN 10121266).

MSA Customer Service should contact the Helmet Accessory Product Line Manager for protection levels when using the V-Gard Arc Visor and Nitrometer with V-Gard Frames, V-Gard Chin Protectors and MSA Helmet combinations other than what is listed in the product literature.

40. Can customers get test data on the calorie ratings?

Yes. MSA has tested the most common product combinations. For other, less frequently used combinations, MSA Head, Eye, Face, Hearing and Communication (HEFHC) engineering will certify (via self-certificate) that “stand in” products meet published ratings.

Customers are directed via our literature and website to contact MSA Customer Service for ratings on combinations of products other than what is published.

MSA Customer Service should contact the Helmet Accessory Product Line Manager for protection levels when using the V-Gard Arc Visor/product combinations other than the V-Gard Frame, V-Gard Chin Protector and MSA Helmet, as indicated.

41. 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. EN166 provides criteria for IR filter levels. 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 the “R” mark. And, 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 filtering. In fact, a reflective-coated visor that is not marked with an “R” mark could create a false sense of security by reducing the heat load felt by a wearer behind such a visor, but perhaps allowing harmful IR through, undetected by the eye.

The other issue faced by customers in these environments is heat. To help our customers better understand heat resistance and irradiance performance of V-Gard Reflective Coated visors, the MSA Chemical Research and Materials Science team conducted “Radiant Heat Resistance” investigations on several types of V-Gard Visors. In these experiments, the visors were exposed to three different levels of irradiance on the visor surface (20, 15 or 9.5 kW/m-2) from a heat source of 1460^{o}F for 250 seconds. The outside of the reflective visor was >400^{o}F, but the temperature at the eye was slightly more than 100^{o}F. Detailed results of the tests can be found in the white paper, “Radiant Heat Resistance and V-Gard Visors” (ID ID0670-020).

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 PPE 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.

Please note: V-Gard Reflective ET Visors are not intended for use where a Shade IR visor is required.

42. Explain the difference between V-Gard ET Visors without reflective coating and those with it.

ET visors without reflective coating (“uncoated ET V-Gard Visors”) have been conditioned to a high of 131˚F (and a low of -23˚F) and then tested to the medium impact rating in the EN166 standard (higher impact speed than ANSI/ISEA Z87.1-2010). They do not filter IR, and do not dissipate heat. These visors are not recommended for use against radiant heat hazards.

While the above shows the heat deflection temperature of the molding and coating compounds, the ANSI/ISEA Z87.1-2010standard to which the visors are tested and comply does not require heat deflection testing. Similarly, while EN166 does offer performance criteria for reflectance, because uncoated ET V-Gard Visors do not have reflective coating; these visors are not intended for performance against IR. Additionally, 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 PPE 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

43. How many frames are there in the V-Gard Accessory System?

There will be 10 frames sold globally:

- V-Gard Frame for Slotted Caps (with or without debris control)
- V-Gard Universal Frame for Caps (with or without debris control)
- V-Gard ET Frame for Slotted Caps (with or without debris control)
- V-Gard Universal ET Frame (with or without debris control)
- V-Gard Hat Frame (no debris control)
- V-Gard Hat ET Frame (no debris control)

44. Explain the difference between V-Gard and Defender Frames?

There are some significant differences between the new V-Gard Frames, and the Defender+/Defender Easy Release Frames. The main differences are listed below:

V-Gard Frames for Slotted Caps

- Work with or without muffs; stowable slot adaptors included with every frame;
- Optional, replaceable debris control;
- One PN sold across the globe with all required approvals (important to global customers); and
- Each frame fits all MSA slotted caps. Please see Question 74 for additional details.

V-Gard Universal Frames for Caps

- Work with or without muffs due to pivot location;
- Optional, replaceable debris control;
- One PN sold across the globe with all required approvals (important to global customers);
- Each frame fits all MSA caps. Please see Question 74 for additional details; and
- Heavy duty, flat rubber strap to avoid slippage.

45. Are there any metal V-Gard Frames?

No. There are no metal frames currently in the V-Gard Accessory Face Protection line. In the future, MSA may offer metal frames for caps and hats.

Metal frames were not launched due to customer complaints about the metal frames "rolling off" the back of the cap due to the spring. There are also other issues with metal frames cited by our customers:

- 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.

To replace our current metal frames, there are elevated temperature (ET) versions of the V-Gard ET Frame for Slotted Caps and V-Gard ET Universal Frame for Caps and a V-Gard ET Frame for Hats.

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

No. There are no metal parts on any of the V-Gard Frames currently offered in the line.

47. Are V-Gard frames dielectric?

V-Gard Frames are considered an accessory to the hardhat and are not tested for dielectric. Although they are not tested, accessories must not compromise the dielectric properties of the helmet. V-Gard Frames will not reduce any dielectric properties of MSA Class E or G helmets.

48. What is the temperature to which the ET frames are tested?

The ET frames were tested to withstand temperatures of 350˚F (176.7˚C) for at least five minutes, helping to reduce warping, cracking or crazing. This is the temperature our Skullgard® and Thermalgard® helmets are tested to.

While the above shows the heat deflection temperature of the molding compound, the ANSI/ISEA Z87.1-2010 standard to which the frames are tested and comply does not require heat deflection testing. Additionally, 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 PPE 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.

49. Do the ET frames hold up to the same temperature as MSA helmets for ET use?

The ET frames were tested to withstand temperatures of 350˚F (176.7˚C) for at least five minutes, helping to reduce warping, cracking or crazing. This is the temperature our Skullgard and Thermalgard helmets are tested to.

50. But … my ET helmet is used in much higher temperatures.

The Skullgard and Thermalgard are tested for impact in high heat environments up to 350^{o}F. If a customer is using the helmet in an environment exceeding that temperature (e.g., through use of such items as helmet alteration with reflective tape), MSA is not liable for impact or high heat protection based on our instructions. If the work environment is exceeding 350^{o}F, we should advise the customer they need different PPE. As the manufacturer, MSA does not recommend altering or modifying a helmet in any way which includes the addition of paint, coatings, and stickers. That is why our frames are tested to this same temperature.

51. 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 *"V-Gard Accessory System"* brochure (ID 0670-000-MC), and in the "*MSA Chemical Application Quick Reference Guide*" (ID 0670-007-MC). 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 helmets.

52. 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 for Caps. It helps to 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 for Caps (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 for Caps without debris control.

Initially, there will not be a debris control option on V-Gard Hat frames. Please see Question 55 for additional details.

53. Will the debris control "wipe off" cap logos?

No. HEFHC Engineering has tested and found that the debris control does not "wipe off" MSA custom-placed logos, nor does it cover most logos.

54. Do V-Gard Frames have a space between the brim of the cap, allowing sparks or debris to fall behind the visor?

V-Gard Frames for Caps 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 cap brim is limited (we have conducted tests against such incidents). However, a customer can choose to wear V-Gard Frames for Caps without debris control. In these cases, it is possible that debris can fall between the frame and cap brim when the frame is in the rest position.

55. Why don't V-Gard Hat Frames offer debris control or slot adaptors?

The original Voice-of-Customer (VOC) indicated that customers did not want debris control with hats, and at the time project was initiated, the slotted hats were not available or even being considered. Recently, new VOC input indicated that customers now want a slotted hat frame that offers debris control. MSA is currently considering development of this product.

56. Can the debris control be used in a hot environment?

As a result of the performance of the debris control part when testing to EN hot solid standards and internal radiant heat tests, MSA HEFHC engineering believes that the debris control will work under elevated temperature conditions. Additionally, even though not required, MSA tested the debris control to EN166 hot solids tests. The debris control performance exceeded the test requirements and the rubber material showed complete resistance to surface penetration by a steel ball, super-heated to 1652˚F/ 900˚C. However, as with all products, specific working conditions could vary from lab conditions.

57. What are the hooks on the rails of the V-Gard Frame for slotted caps 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.

58. There have been PCRs on the Defender pivot in the past. Have you changed the pivot at all?

Yes and no. The design of the patented pivot mechanism has not changed. However, to meet the stringent cycle requirements defined for V-Gard Frames, engineering changed the O-ring used in the pivot.

59. The V-Gard Frames pivots seem to have high tension. Why?

V-Gard Frames were designed with input from hundreds of customers across the globe. Customers wanted to be sure that the new frames functioned in a similar, if not improved manner, over the current MSA Defender Frames. For example, in addition to holding the "up" position with our largest visors, customers insisted that the frames maintain their stowage and deployment under varying environments, temperatures (-25°F to 140°F), and high-use cycle conditions.

MSA is hesitant to reduce the force it takes to open or close the frame, as it may result in premature wear of the pivot, reducing its ability to hold a visor in position – especially under tough working conditions. If the "out-of-the-box" experience with the frame pivot is that it seems tight, simply open and close frame approximately 15 times prior to use.

60. Is MSA going to change the V-Gard Frame pivot?

While we have received only a few inquiries about pivot tension, rest assured we've listened. MSA is considering converting the current pivot system to the one used on the V-Gard Headgear. The headgear offers a unique, patent-pending infini-just lift/closure for customized visor placement, with easy to grip, self-retained knobs. That means unlimited visor position locations - without removable parts to misplace!

For now, however, we are not changing the pivot as it exists because we believe it will provide both the performance and longevity required by customers. There is a customer letter that can be sent to address the pivot issue. Please refer to " l-Frame Pivot.pdf," dated July 7, 2012. It is posted on both

Connextions and iClic and can be sent to customers, ONLY WHEN an inquiry is made on the pivot tension.

61. Will V-Gard Frames work with MSA bump caps?

No. V-Gard Frames were not designed or tested to work with bump caps.

SECTION 4: Questions about V-Gard Chin Protectors

62. What are V-Gard Chin Protectors 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.

63. 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.

MSA will offer a clear, standard chin protector once approvals are secured; we expect to have this product available starting in Q3 2013; it will be intended for use only with clear visors, and warnings will be prevalent.

SECTION 5: Questions about V-Gard Headgear

64. How do V-Gard and Defender Headgear differ?

There are some significant improvements offered on the V-Gard Headgear:

- V-Gard Headgear works with V-Gard Visors (see question 69, below).
- V-Gard Headgear are sold with a replaceable, sweat-wicking, cushioned headband and ratchet cover to help keep workers dry and cool.
- V-Gard Headgear has a unique, patent-pending infini-just lift/closure for customized visor placement, with easy to grip, self-retained knobs. Unlimited visor positions are now possible - without removable parts to misplace!
- The V-Gard headgear weighs less than the Defender.

65. What was the customer response to V-Gard Headgear?

V-Gard Headgear performed well in almost every aspect reviewed during customer field trials. ***In fact, nearly 90% of respondents indicated they would be more likely to buy V-Gard Headgear vs. their current product.*** The highest-scoring product feature ratings were:

- 73% of respondents indicated that weight was the most important improvement over what they currently wear. The weight being acceptable scored a 4.48 out of 5.
- 64% said “fit” and “balance, security and comfort” were the most important improvements, with acceptance scores of 4.26 and 4.46-4.49 out of 5, respectively for these four attributes.
- 55.8% indicated that the visor adjustment mechanism (“infini-just”) was the most important improvement. The fact that the adjustment knobs do not come off scored a 4.49 out of 5. A patent has been filed for this mechanism.

66. Can the sweatband and ratchet covers be washed?

Yes. These replacement parts were washed per AATCC Test Method 61-1996 in the MSA lab. Even after 10 washes in the AATCC Launder-O-Meter (approx. 50 home washings), MSA product engineers found the products to be acceptable for continued use. .

67. How are the sweatbands packaged and sold?

Each V-Gard Headgear (General Purpose or Elevated Temperature) is sold with a sweatband and ratchet cover already installed.

Replacement sweatbands are packaged and priced ($20 or $4 list price/sweatband) as bags of 5. These packages offer a barcode and retail-type packaging. HOWEVER, there are 5 bags of 5 sweatbands per shipping box (i.e., 25 individual sweatbands) to our channel partners. Our channel partners can either redistribute the entire box of 25 or open the box and ship just one bag of five sweatbands. MSA WILL NOT sell one bag of five sweatbands or one individual sweatband.

68. Does MSA sell replacement ratchet covers?

No, but V-Gard Headgear (General Purpose or Elevated Temperature) is sold with a sweatband and ratchet cover already installed.

The ratchet design will eventually be replaced once the new V-Gard Ratchet Suspension is available. While ratchet covers will not be available at V-Gard Headgear launch as replacement parts, the covers should be available as replacement parts in late 2013/early 2014, if needed.

69. Does the V-Gard Headgear work with all visors?

V-Gard Headgear works with all V-Gard Visors. ***It does not work with any Defender Visor****.*

While the V-Gard Arc Visor and V-Gard Arc Nitrometer assembly will install on V-Gard Headgear, **MSA DOES NOT RECOMMEND the use of the Arc Visor (10115847) or Arc Nitrometer/Chin Protector assembly (10118480) with the V-Gard Headgear.** These Arc Visors are tested to ASTM F2178-2008 Test Method (ref. NFPA 70E-2012, Hazard Risk Category), and are designated for use with specified V-Gard Frames and MSA helmets ONLY as face protection for workers exposed to high voltage electric arcs. V-Gard Headgear has not been tested or certified to the Test Method, and should not be used for this type of Arc Flash protection. Warnings to this affect appear in the marketing materials, as well as the instruction manual.

70. What temperature has the V-Gard Elevated Temperature Headgear been tested to?

V-Gard Headgear, Elevated Temperature, Extended Crown has been tested to 400^{o}F. Please see V-Gard Headgear Competitor Comparison (ID0300-11), pages 3-4, for details on our test results vs. competitors' product, showing that V-Gard Headgear performs as stated.

71. Does MSA offer V-Gard Headgear kits?

Yes. In North America, we will offer two types of V-Gard Headgear kits: General Purpose and Elevated Temperature:

- P/N 10127063: V-GARD HEADGEAR KIT, GENERAL PURPOSE. Contains: V-Gard General Purpose Headgear (PN 10127061) and V-Gard Clear, PC Visor, 8” (20.3 cm) x 17” (43.2 cm) x .04” (1.02 mm) (PN 10115836).
- P/N 10127064: V-GARD HEADGEAR KIT, ELEVATED TEMPERATURE. Contains: V-Gard Headgear, Elevated Temperature, Extended (PN 10127062) and V-Gard Clear, Green tint PC, reflective coating, molded, 9.5” (24.1 cm) x 17.75" (45.09 cm) x .07” (1.78 mm) (PN 10115850).

SECTION 6: Questions about V-Gard System Products, Other PPE & Specific Uses

72. Do V-Gard Accessories work with competitor frames, visors and chin protectors?

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, with MSA Helmets.

If a competitor claims that their visors or frames are compatible with MSA visors, frames, headgear, or helmets, customer should ask for documentation to support such a claim, preferably from a qualified third-party test laboratory.

73. Do V-Gard Accessories work with the frames, visors and chin protectors in the current Defender line?

No. These two product lines are not compatible.

The V-Gard line has patent-pending “V” alignment guides and three touchpoint load for easy visor installation – a change approved by our customers!

When you see a comment in MD04 on Defender products that are being phased out, be sure to tell your customers they will need a V-Gard Frame (if they are ordering a V-Gard Visor) or a V-Gard Visor (if they are ordering a V-Gard Frame or V-Gard Chin Protector) in order to use the new products.

74. Which V-Gard Accessories are compatible with which?

- All V-Gard Frames are compatible with all V-Gard Visors.
- All V-Gard Nitrometers (i.e., connections in both the bottom and top of visor) are compatible with all V-Gard Chin Protectors.
- All V-Gard Universal Frames for Caps are compatible with all MSA caps. (There is one combination that we do not recommend: if the customer is wearing a SmoothDome, V-Gard molded visor and earmuffs, they should not wear the Universal frame. They should wear the V-Gard Frame for Slotted caps for this combination.)
- All V-Gard Frames for Slotted Caps are compatible with all MSA Slotted Caps. (MSA recommends the use of the debris control when also wearing both cap-mounted muffs and V-Gard molded visors.)
- All V-Gard Frames are compatible with MSA cap-mounted earmuffs, such as the left/RIGHT and Classic (Sound Control) lines. For additional details on compatibility with earmuffs, please see Questions 76, 77, and 78.

- V-Gard Frames will close and can be used with many half-mask respirators. Please refer Question 75 for details.

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. Additionally, since MSA have patents protecting our designs; "knock offs" will be difficult to produce and sell into the market.

75. Can V-Gard Accessory System assemblies be used with respirators?

V-Gard Frames will close and can be used with many half-mask respirators. Please refer to "V-Gard Frame/Respirator Compatibility Chart" (on Connextions and iClic) for details about specific products, including competitors' half-masks and cartridges.

76. Which earmuffs are able to be used with V-Gard face protection?

All MSA cap-mounted earmuffs (i.e., those that go into the cap slots) have been tested with MSA helmets and V-Gard Accessories, and can be used.

Most V-Gard Visors are designed to close with earmuffs on. Please refer to *"V-Gard Visor Comparison"* chart (ID 0670-004-MC) for details on which visors are compatible with earmuffs.

Finally, if the customer is wearing a SmoothDome® Slotted Cap, V-Gard molded visor and earmuffs, we do not recommend they use the V-Gard Universal frame. They should wear the V-Gard Frame for Slotted caps for this particular PPE combination.

77. Are any ear muff adaptors kits needed?

No. Adaptor kits or other parts are not required to make MSA cap-mounted muffs work with any of the V-Gard Universal Frames (cap or hat versions).

The V-Gard Frames for Slotted Caps have a patent-pending, stowable slot adaptor and is automatically included with every frame; these frames can be used with or without MSA cap-mounted muffs. The slot adaptor is also sold as a replacement part, offering two pair per bag, should the customer lose the original slot adaptors.

The universal cap or hat frames have a flat rubber strap and the pivots are forward of where a slot (or screwed in muff) would be, so these can be used with muffs as well.

78. Do SoundBlocker muffs work with the new V-Gard Frames?

SoundBlocker 26 for non-slotted caps (PN 10022021) work with the V-Gard Universal cap frames. This product will not be discontinued.

SoundBlocker 26 for Defender Frames (PN 10026398) **DO NOT** work with any V-Gard frames. This product was not a cap-mounted muff, but rather, fit inside the Defender frame pivot. This product was discontinued in December 2011.

79. Do Sound Control SH Ear Muffs work with the full brim frames?

The Sound Control SH for full brim hats work with the V-Gard Full Brim frames as the frame pivots are forward of the slots.

80. Can logoed, non-white MSA helmets be worn with arc assemblies?

Yes. According to MSA Head Protection Engineers, neither the helmet color or presence of a logo has a significant or measurable effect on the arc rating of the assembly.

81. Can I wear a vented cap or hat, or a Skullgard with a V-Gard Arc Visor?

MSA does not recommend wearing any protective cap, rated with a Class C (conductive) rating, with an arc visor. These protective caps do not provide protection from electrical conductors. Non-vented caps and hats, as well as Skullgard helmets are rated to a Class C.

82. Can I wear earmuffs with an Arc Visor?

MSA tested the left/RIGHT muffs with the V-Gard Arc Visor to help ensure that wearing the muffs would not interfere with the calorie rating achieved by the combination, when testing to ASTM F2178-08 Standard Test Method for Determining the Arc Rating and Standard Specification for Face Protective Products. It is, however, the responsibility of the customer's safety specialist to recommend and approve the use of muffs with Arc Visor and assemblies.

83. Does MSA still recommend the use of safety eyewear under visors?

Yes. MSA recommends wearing MSA impact-rated spectacles or goggles under all visors. The reason for this is that we have no way of knowing what type or model visor the customer is wearing, whether or not it meets general protector or impact requirements, or if it is actually even conformant and tested to any standard.

84. Will the V-Gard Accessory System work for chainsaw "kickback" hazards?

There isn't a standard to specifically address chainsaw "kickback," so we cannot measure performance against this particular hazard. Additionally, we would need to understand, at a minimum, the mass and acceleration being used to assess the kickback force – an impossible task as these inputs would likely vary with every user and application.

However, if the customer is already using face protection products, we can suggest they try one of our thicker, longer molded V-Gard PC visor, or a V-Gard molded nitrometer PC visor + chin protector. The customer needs to understand though, that the performance of any product can vary based on conditions of use, and that proper PPE should be selected for use and application by the site safety specialist. The site safety specialist has sole responsibility to convey the hazards, communication of instructions, precautions and limitations, and to ensure they are observed.

SECTION 7: V-Gard Winter Liners

85. What V-Gard Liners are offered in the product line?

There are 12 V-Gard Winter Liner products, offering three levels of protection. Please refer to the MSA V-Gard Winter Liner bulletin and other launch materials for product details.

- The V-Gard Value liners offer protection from cold at an economical price.
- The Select products offer everything the Value products do, plus an additional layer of fabric for warmth, flame retardancy to 50 washings, and water repellency. Some offer unique earflaps for use with earmuffs without compromising hearing protection levels.
- The Supreme products offer three layers of fabric for warmth, flame resistance and resistance to arc exposure (to an ATPV of 8 cal/cm2), water repellency and more.

86. What standards do the V-Gard Winter Liners meet?

Under NFPA 70E, liners are technically considered, "Clothing and Other Apparel Not Permitted," UNLESS that clothing/apparel is arc-rated (which ours is). Our products comply with F1506 to confirm FR, and were tested by ArcWear to secure the ATPV arc rating (which is actually much higher than 8, but we were worried about "abuse," so we were conservative) to test method F1959/F1959M-06a.

87. Do our liners comply with NFPA 2112?

According to a SEI technician and flame-resistant expert on the committee, winter liners are not considered to be “protective garments” and are not required to meet NFPA 2112 (Standard on Flame Resistant Garments for Protection of Industrial Personnel against Flash Fire). However, MSA is confident that our Supreme liners would pass this standard if required.

88. What is the difference between flame retardant and flame resistant?

Flame retardant garments have been chemically treated to resist burning when a flame is present. While chemical treatment can wear off after the first wash, all fabric layers of ALL V-Gard Select products offer flame retardancy up to 50 washings.

Flame resistant (FR) garments are made of special fibers that allow them to self-extinguish when exposed to flame or thermal ignition and according to NFPA 70E must also be arc-rated after washing them 25 times. Flame resistance cannot be removed by washing. Unlike some winter liners in the market, ALL layers of fabric in V-Gard Supreme Liners are flame resistant, affording FR protection throughout the life of the product (assuming garment care instructions have been followed).

89. The Supreme liners seem costly …why?

All layers of the V-Gard Supreme Winter Liners are made of special flame resistant fibers, so that the flame resistant properties cannot be washed out. All layers of the Supreme liner fabric have also been tested against exposure to arc, and together offer an ATPV of 8 cal/cm2.

90. Why aren’t the flame retardant Select products arc-rated? Your competitors do.

Flame retardant garments have been chemically treated to resist burning when a flame is present. Depending on the chemical treatment, it can wear off after the first wash. MSA feels strongly that if the flame retardancy could wash out, it is not safe to have arc-rating on this type of chemically treated material where flame retardancy levels could vary. Additionally, the arc test method for the liners only requires three washes and then testing. If the claim of flame retardancy goes from “26-50” washes, the arc testing method and the flame retardancy claim are not compatible. In other words, “What happens if the liner is hit by an arc after the liner has been washed more than three times … how about 26?”

MSA is much more comfortable offering arc rating on truly flame resistant (FR) garments, where the special fibers allows the material to self-extinguish when exposed to flame or thermal ignition-regardless of the number of times a product is washed.

91. Are the V-Gard Liners sold individually?

No. The liners are ONLY sold in sets of 12 or 3, as listed on the “V-Gard Winter Liner Comparison and Price List.” Prices shown in SAP are list price/set.

92. Are product test results available?

Upon request, MSA will provide self-certification for select product claims.

93. Are these products available on the Try It program?

Upon request, MSA will provide self-certification for select product claims.