



DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF STAFF  
200 ARMY PENTAGON  
WASHINGTON DC 20310-0200

REPLY TO  
ATTENTION OF

DACS-SF

28 FEB 2002

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Generic Approval of Commercial Chemical Protective Equipment

1 References:

- a. DACS-SF memorandum dated 11 Apr 94, subject: Use of Commercially Available Chemical Protective Clothing.
- b. DACS-SF memorandum dated 30 Dec 98, subject: Revised Policy for the Use of NIOSH-Certified Commercial Respirators with Chemical Agents.

2. In order to comply with Federal, Department of Defense, and Army safety and health standards, the U.S. Army Materiel Command Chemical Agent Safety and Health Policy Action Committee (CASHPAC), on behalf of the Director of Army Safety, developed a review and approval program (reference a and b) to allow the use of commercially available EPA Level A and B/C chemical protective equipment (clothing and respirators) during toxic chemical agent operations. The chemical protective clothing test criteria, developed by the CASHPAC, identifies the specific testing and documentation necessary for approval to use commercially available EPA Level A and B/C protective clothing in toxic chemical agent operations and requires development of supporting use scenarios and hazard analyses.

3. Many Department of the Army installations and activities have used the CASHPAC process to obtain approval to use commercial protective equipment, and approval for use of the same manufacturers and models of EPA Level A and B/C clothing under the same use scenario(s) are continuing to be requested. In order to facilitate selection and approval of commercial chemical protective clothing, the CASHPAC executive agent (the Edgewood Chemical Biological Center Safety/Surety/Security Office) has compiled the attached list of clothing and respirators approved for specific chemical agents and use scenarios and with specific limitations.

4. Use of CASHPAC-approved chemical protective clothing/respirator approved for the specific agent and in the specific use scenario listed on the attached eliminates the need to use the CASHPAC approval process outlined in reference a and b. Note that under the following situations the CASHPAC approval process outlined in reference "a"



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and "b" must be used:

a. An installation/activity wants to use a commercial EPA Level A or B/C ensemble/respirator that has not been approved and listed by the CASHPAC.

b. A different use scenario is desired.

c. An installation/activity desires to use the commercial EPA Level A or B/C ensemble/respirator with chemical agent for which it has not been tested.

d. An installation/activity desires to use a commercial EPA Level A or B/C ensemble/respirator beyond its approved limitations.

5. The enclosure contains the current list of approved clothing/respirators coupled with appropriate scenarios, limitations and chemical agents. There are many other manufacturers of EPA Level A and B/C clothing that may have been tested with chemical agent, but were not submitted by an installation/activity for approval and are therefore not on this list.

6. An installation/activity planning to use CASHPAC approved/listed commercial chemical protective equipment will furnish a copy of the equipment selection decision logic (listing potential agent exposures and use scenarios) to DACS-SF for future reference. The installation/activity shall also maintain a copy of their decision logic for review by any Department of Army Pre-Operational Inspection Team and include it in applicable chemical warfare materiel safety submissions.

7. Point of contact in this office is Jim Patton, 703/601-2413, DSN 329-; point of contact on the CASHPAC is Carol A. Eason, 410-436-2051 or DSN 584-.

Encl

  
JAMES A. GIBSON  
Senior Safety Manager  
Office of the Director of Army Safety

DISTRIBUTION:

Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health), 110 Army Pentagon, Washington, DC 20310-0110

continued

REPLY TO  
ATTENTION OF**DEPARTMENT OF THE ARMY**  
OFFICE OF THE CHIEF OF STAFF  
200 ARMY PENTAGON  
WASHINGTON DC 20310-0200

DACCS-SF

2 June 2003

MEMORANDUM FOR COMMANDER, U.S. ARMY CORPS OF ENGINEERS HUNTSVILLE  
CENTER, P.O. BOX 1600, ATTN: CEHNC-OE-DC (MS. WILLIAMS), HUNTSVILLE, AL  
35807-4301

SUBJECT: Approval of Tyvek "F" Chemical Protective Ensemble with Nitrogen Mustard

## 1. Reference:

a. Memorandum, ECBC, AMSSB-RCB-RS, 29 May 2003, SAB.

b. Memorandum, USACE, CEHNC-OE-DC, 6 May 2003, subject: Results of Nitrogen Mustard Testing for the Tyvek "F."

c. Memorandum, DACCS-SF, 1 May 2003, subject: Generic Approval of Commercial Chemical Protective Equipment.

2. The request at ref 1b was reviewed by members of the Alternate Commercial Protective Clothing and Equipment Subcommittee (ACPCES) of the Department of the Army Chemical Agent Steering Committee. Approval for the Corps of Engineers to use the subject ensemble, in scenarios described in ref 1b, was recommended in ref 1a.

3. After review of the provided information, this office approves the use of the Tyvek "F" chemical protective ensemble for the scenarios in ref 1b provided all of the previous requirements/restrictions in reference 1c are followed.

4. Point of contact for any questions is the undersigned or Ms. Emma Forrest, Edgewood Chemical and Biological Center, commercial (410) 436-2585, DSN 584-2585, e-mail emma.forrest@us.army.mil.

Encl

A handwritten signature in black ink, appearing to read "James A. Gibson".

JAMES A. GIBSON  
Senior Safety Manager  
Office of the Director of Army Safety

Copy Furnished

Technical Director, Edgewood Chemical and Biological Center, ATTN: AMSSB-RCB-RS  
(Ms. Eason), Aberdeen Proving Ground, MD 21010-5424

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SUBJECT: Generic Approval of Commercial Chemical Protective Equipment

DISTRIBUTION, cont.

Project Manager for Chemical Stockpile Disposal, ATTN: SFAE-CD-SQ, Aberdeen Proving Ground, MD 21010-5401

Project Manager for Non-Stockpile Chemical Materiel, ATTN: SFAE-CD-N, Aberdeen Proving Ground, MD 21010-5401

Chief, National Guard Bureau, Army Aviation and Safety Directorate, Arlington Hall Readiness Center, ATTN: NGB-AVN-S, 111 South George Mason Drive, Arlington, VA 22204-1382

Commander, U.S. Army Materiel Command, ATTN: AMCSF, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001

Commander, U.S. Army Soldier, Biological and Chemical Defense Command, ATTN: AMSBC-RA, Aberdeen Proving Ground, MD 21010-5423

Commander, U.S. Army Soldier, Biological and Chemical Defense Command, ATTN: AMSBC-SO, Aberdeen Proving Ground, MD 21010-5423

Director, Edgewood Chemical Biological Center, ATTN: AMSCB-ODR-S, Aberdeen Proving Ground, MD 21010-5423

Commander, U.S. Forces Command, ATTN: AFPI-SO, Fort McPherson, GA 30330-6000

Commander, U.S. Army Corps of Engineers, ATTN: CESO-ZA, WASH DC 20314-1000

Commander, U.S. Army Training and Doctrine Command, ATTN: ATBO-S, Fort Monroe, VA 23651-5000

Director, U.S. Army Nuclear and Chemical Agency, ATTN: ATNA-CM, 7150 Heller Loop, Suite 101, Springfield, VA 22150-3198

Commander, U.S. Army Center for Health Promotion and Preventive Medicine, ATTN: MCHB-TS-OFS, Aberdeen Proving Ground, MD 21010-5422

Director, U.S. Army Technical Center for Explosives Safety, ATTN: SIOAC-ES, McAlester, OK 74501

**Manufacturer:** Dupont and Dupont-licensed suppliers

**Model:** Tyvek "F"

**Level:** B/C

**Agent(s):** G-series, HD, VX

**Use Scenario(s):**

1. Intrusive excavation using, heavy machinery, hand tools, by hand, sifting equipment, etc.
2. Environmental sample collection such as soil, sludge, water, etc.
3. Decontamination of agent contaminated media. For example, soil, debris, etc.
4. Operation of a PDS or EPDS.
5. Assessment, packaging, unpackaging and removal of excavated items.
6. Well drilling/installation.
7. General site work such as, equipment maintenance, cylinder change-out, other routine tasks as defined in the applicable safety submission.

**Reuse:** Not reusable if contaminated with vapor and/or liquid chemical agent. This is also a one-time use suit.

**Limitations/Additional Requirements:**

1. Must be removed immediately if contaminated with liquid chloroform/HD or GB and the wearer decontaminated within 30 minutes.
2. If workers encounter leaking CAIS they will immediately evacuate the area and don other approved chemical protective clothing.
3. CPU must be worn for HD operations.
4. May not be used if fire is expected (suit is not NFPA certified for flame resistance).
5. Have a heat stress plan developed, approved, and workers trained prior to use.
6. Suit must be thoroughly inspected before and during use for signs of wear.
7. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent material quality over time and between production lots.

**Manufacturer:** GEOMET (via Kappler)

**Model:** Geomet Responder CSM

**Level:** A

**Agent(s):** G-series, HD/L, VX

**Use Scenario(s):**

1. Emergency response into an area in which an unplanned release of chemical agent has occurred.
2. Operation of a PDS/EPDS.
3. CAIRA operations such as, clean up of spills, air monitoring set up, first entry after engineering control failure, containment of open agent.
4. Demilitarization of CAIS (unpacking, segregating, storing, preparing, etc.).
5. Operations conducted in igloos or test chambers involving suspect chemical agent items.
6. Destruction/dismantling of contaminated buildings and equipment.
7. Isolation of leaking munitions.
8. Emergency back-up entries into IDLH areas.
9. Confined space entry into toxic/hazardous environments.
10. Routine first entry monitoring into outdoor or indoor agent storage areas/igloos.
11. Sampling and removal (manually or mechanically) of potentially contaminated soil and/or items from remediation sites.
12. Decontamination/treatment of soil samples.

**Reuse:** Not reusable if contaminated with vapor and/or liquid chemical agent. Otherwise, if not contaminated, this is a limited use suit.

**Limitations/Additional Requirements:**

1. May not be used if fire is expected (suit is not NFPA certified for flame resistance) unless the silver overshield is worn.
2. Have a heat stress plan developed, approved and workers trained prior to use.
3. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent material quality over time and between production lots.
4. Pass-through (if worn tethered) must be compatible with airline system.

**Manufacturer:** Trelleborg Industri

**Model:** TRELLECHEM HPS

**Level:** A

**Agent(s):** G-series, HD, L, VX

**Use Scenario(s):**

1. Working within a vapor containment structure (VCS).
2. Decontamination of a VCS.
3. CAIRA operations such as, clean up of spills, air monitoring set up, first entry after engineering control failure, containment of open agent.
4. Routine first entry monitoring into outdoor or indoor agent storage areas/igloos.
5. Operations conducted in igloos or test chambers involving suspect chemical agent items.
6. Destruction/dismantling of contaminated buildings and equipment.
7. Isolation of leaking munitions.
8. Emergency back-up entries into IDLH areas.
9. Confined space entry into toxic/hazardous environments.
10. Operation of the PDTDF (decontamination of interior and work conducted in agent environment).
11. Operation of the MAPS facility (removal of drill/cut box from the explosion containment chamber (ECC); decontamination of the ECC; opening munition overpack in process room; decontamination of the process room).
12. Operation of the solvated electron technology (SET™) within a chemical agent test chamber.
13. Sampling and removal (manually or mechanically) of potentially contaminated soil and/or items from remediation sites.
14. Decontamination/treatment of soil samples.

**Reuse:** Not reusable if contaminated with liquid agent; reusable if contaminated with vapor agent.

**Limitations/Additional Requirements:**

1. Have a heat stress plan developed, approved and workers trained prior to use.
2. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent material quality over time and between production lots.
3. Pass-through (if worn tethered) must be compatible with airline system.

**Manufacturer:** Trelleborg Industri

**Model:** TRELLECHEM TLU

**Level:** A

**Agent(s):** G-series, HD/L, VX

**Use Scenario(s):** CAIRA operations such as, clean up of spills, air monitoring set up, first entry after engineering control failure, containment of open agent.

**Reuse:** Not reusable if contaminated with vapor and/or liquid chemical agent. Otherwise, if not contaminated, this is a limited use suit.

**Limitations/Additional Requirements:**

1. May not be used if fire is expected (suit is not NFPA certified for flame resistance).
2. Have a heat stress plan developed, approved and workers trained prior to use.
3. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent material quality over time and between production lots.
4. Pass-through (if worn tethered) must be compatible with airline system.

**Manufacturer:** GEOMET

**Model:** Commercial STEPO

**Level:** A

**Agent(s):** G-series, HD/L, VX

**Use Scenario(s):** CAIRA operations such as, clean up of spills, air monitoring set up, first entry after engineering control failure, containment of open agent.

**Reuse:** Not reusable if contaminated with vapor and/or liquid chemical agent.

**Limitations/Additional Requirements:**

1. Have a heat stress plan developed, approved and workers trained prior to use.
2. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent material quality over time and between production lots.

**Manufacturer:** Trelleborg Industri

**Model:** TRELLECHEM HPS-TS

**Level:** B

**Agent(s):** G-series, HD/L, VX

**Use Scenario(s):**

**Reuse:** Not reusable if contaminated with liquid agent; reusable if contaminated with vapor agent.

**Limitations/Additional Requirements:**

1. Working within a vapor containment structure (VCS).
2. Decontamination of a VCS.
3. CAIRA operations such as, clean up of spills, air monitoring set up, first entry after engineering control failure, containment of open agent.
4. Routine first entry monitoring into outdoor or indoor agent storage areas/igloos.
5. Operations conducted in igloos or test chambers involving suspect chemical agent items.
6. Destruction/dismantling of contaminated buildings and equipment.
7. Isolation of leaking munitions.
8. Emergency back-up entries into IDLH areas.
9. Confined space entry into toxic/hazardous environments.
10. Operation of the PDTDF (decontamination of interior and work conducted in agent environment).
11. Operation of the MAPS facility (removal of drill/cut box from the explosion containment chamber (ECC); decontamination of the ECC; opening munition overpack in process room; decontamination of the process room).
12. Operation of the solvated electron technology (SET™) with in a chemical agent test chamber.
13. Sampling and removal of potentially contaminated soil and/or items from remediation sites.
14. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent materiel quality over time and between production lots.

**Manufacturer:** Kappler®

**Model:** Kappler® Coverall Style 41250 FV

**Level:** N/A

**Agent(s):** GB, HD, L, VX

**Use Scenario(s):**

1. Routine disposal of the industrial and warfare chemicals found in CAIS sets.

**Reuse:** Not reusable if contaminated with liquid or vapor agent.

**Limitations/Additional Requirements:**

1. The Kappler® Coverall is approved for use as a replacement for the Army Level B apron.
2. Prior to use of suit, manufacturer shall provide validation of QA/QC batch testing of suit material swatches to ensure consistent material quality over time and between production lots.
3. Must have a complete inspection program in place and employed to ensure that damaged coveralls are not reused.

**Manufacturer:** North

**Model:** North 7600-8A NIOSH-Certified Full Facepiece Air-Purifying Respirator with North 7583/P100 Organic Vapors/Acid Gases Cartridge/Filter

**Level:** N/A

**Agent(s):** Specific chemical agents listed in AR 50-6.

**Use Scenario(s):**

1. Added protection in chemical agent laboratory operations when chemical agent is inside a certified chemical agent laboratory ventilation hood.
2. Emergency-escape from a chemical agent laboratory.

**Reuse:** Respirators and cartridges that have been exposed to chemical agents will be decontaminated, monitored, and disposed of.

**Limitations/Additional Requirements:**

1. Near Real Time (NRT) monitoring must be conducted to ensure agent levels do not exceed the Maximum Use Concentration (MUC) for the specific agent involved. The MUC is the assigned protection factor of the respirator (50) multiplied times the Airborne Exposure Limit (AEL) for the agent. The MUC for mustard and Lewisite will not exceed 0.003 mg/m<sup>3</sup>.
2. The user's Respiratory Protection Program will meet the requirements of 29 CFR 1910.134, to include establishing filter/canister change-out schedules.
3. Additional personal protective clothing and equipment will be adequate for the work being performed.

**Manufacturer:** North

**Model:** North 7600 Series NIOSH-Certified Full Facepiece Air-Purifying Respirator with North 7583/P100 Organic Vapors/Acid Gases Cartridge/Filter

**Level:** N/A

**Agent(s):** Specific chemical agents listed in AR 50-6

**Use Scenario(s):**

1. Environmental sampling.
2. Excavation into anomalies.
3. Operations where personnel are responsible for decontaminating personnel and equipment.
4. Emergency escape for personnel working outside the exclusion zone but within the No Significant Effects zone, in the event the near real time (NRT) monitoring devices alarm.
5. Emergency escape from chemical area.
6. Maintenance operations.
7. Industrial chemical operations in support of MMD-1 operations.
8. Processing of munitions/container carcasses already processed in the MMD-1 Process Trailer.
9. Agent treatment process liquid and/or vapor sampling filter unit, and gas reactor carbon replacement in support of MMD-1 operations.

**Reuse:** Respirators and cartridges that have been exposed to chemical agents will be decontaminated, monitored, and disposed of.

**Limitations/Additional Requirements:**

1. Near Real Time (NRT) monitoring must be conducted to ensure agent levels do not exceed the Maximum Use Concentration (MUC) for the specific agent involved. The MUC is the assigned protection factor of the respirator (50) multiplied times the Airborne Exposure Limit (AEL) for the agent. The MUC for mustard and Lewisite will not exceed 0.003 mg/m<sup>3</sup>.
2. The user's Respiratory Protection Program will meet the requirements of 29 CFR 1910.134, to include establishing filter/canister change-out schedules.
3. Additional personal protective clothing and equipment will be adequate for the work being performed.

**Manufacturer:** MSA

**Model:** MSA Ultra-Twin NIOSH-Certified Full Facepiece Air-Purifying Respirator with MSA GME Super Cartridges/P100 Filters

**Level:** N/A

**Agent(s):** Specific chemical agents listed in AR 50-6.

**Use Scenario(s):**

1. Environmental sampling.
2. Excavation into anomalies.
3. Operations where personnel are responsible for decontaminating personnel and equipment.
4. Emergency escape for personnel working outside the exclusion zone but within the No Significant Effects zone, in the event the near real time (NRT) monitoring devices alarm.
5. Emergency escape from chemical area.
6. Maintenance operations.

**Reuse:** Respirators and cartridges that have been exposed to chemical agents will be decontaminated, monitored, and disposed of.

**Limitations/Additional Requirements:**

1. NRT monitoring must be conducted to ensure agent levels do not exceed the Maximum Use Concentration (MUC) for the specific agent involved. The MUC is the assigned protection factor of the respirator (50) multiplied times the Airborne Exposure Limit (AEL) for the agent. The MUC for mustard and Lewisite will not exceed 0.003 mg/m<sup>3</sup>.
2. The user's Respiratory Protection Program will meet the requirements of 29 CFR 1910.134, to include establishing filter/canister change-out schedules.
3. Additional personal protective clothing and equipment will be adequate for the work being performed.

**Manufacturer:** MSA

**Model:** MSA Advantage 1000 NIOSH-Certified Full Facepiece Air-Purifying Respirator with MSA GME Super Cartridges/P100 Filters

**Level:** N/A

**Agent(s):** Specific chemical agents listed in AR 50-6.

**Use Scenario(s):**

1. Industrial chemical operations where there is a potential for chemical agent exposure.
2. Operation of Rapid Response System (RRS).
3. Operation of the Emergency Personnel Decontamination Station (EPDS).
4. Maintenance and housekeeping operations.
5. Emergency escape from chemical area.
6. Industrial chemical operations in support of MMD-1 operations.
7. Processing of munitions/container carcasses already processed in the MMD-1 Process Trailer.
8. Agent treatment process liquid and/or vapor sampling filter unit, and gas reactor carbon replacement in support of MMD-1 operations.

**Reuse:** Respirators and cartridges that have been exposed to chemical agents will be decontaminated, monitored, and disposed of.

**Limitations/Additional Requirements:**

1. NRT monitoring must be conducted to ensure agent levels do not exceed the Maximum Use Concentration (MUC) for the specific agent involved. The MUC is the assigned protection factor of the respirator (50) multiplied times the Airborne Exposure Limit (AEL) for the agent. The MUC for mustard and Lewisite will not exceed 0.003 mg/m<sup>3</sup>.
2. The user's Respiratory Protection Program will meet the requirements of 29 CFR 1910.134, to include establishing filter/canister change-out schedules.
3. Additional personal protective clothing and equipment will be adequate for the work being performed.