Dräger HPS® SafeGuard

Instructions for use

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CE 0158

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www.draeger.com

1 Safety-related information

- Before using this product, carefully read these instructions for use and those of the associated products.
- Strictly follow the instructions for use. The user must fully understand and strictly observe the instructions. Use the product only for the purposes specified in the intended use section of this document.
- Do not dispose of the instructions for use. Ensure that they are stored and used appropriately by the product user.
- Only trained and competent users are permitted to use this product.
- Do not use a faulty or incomplete product. Do not modify the product.
- Notify Dräger in the event of any component fault or failure.
- Only trained and qualified personnel are permitted to inspect, repair and service the product as detailed in these instructions for use and in the technical manual. Further maintenance work that is not detailed in these instructions for use or in the technical manual must only be carried out by Dräger or by personnel qualified by Dräger. Dräger recommends a Dräger service contract for all maintenance activities.
- Use only genuine Dräger spare parts and accessories. Otherwise, the proper functioning of the product may be impaired.

These instructions for use can be downloaded in other languages in electronic format from the technical documentation database (www.draeger.com/ifu) or ordered in print form from Dräger.

2 Conventions in this document

2.1 Meaning of the warning notices

The following warning notices are used in this document to alert the user to potential hazards. The meanings of the warning notices are defined as follows:

Warning sign	Signal word	Classification of the warning notice
⚠	WARNING	Indicates a potentially hazardous situation. If not avoided, it could result in death or serious injury.
⚠	CAUTION	Indicates a potentially hazardous situation. If not avoided, it could result in physical injury. It may also be used to alert against unsafe practices.
	NOTICE	Indicates a potentially hazardous situation. If not avoided, it could result in damage to the product or environment.

2.2 Typographical conventions

This symbol indicates information that facilitates the use of the product.

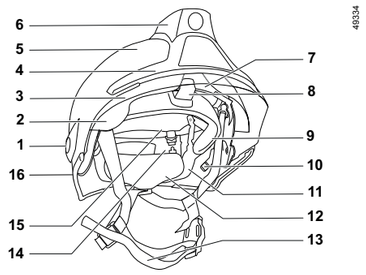
2.3 Trademarks

Trademark	Trade mark owner
HPS®	Dräger

The following web page lists the countries in which Dräger's trademarks are registered:
www.draeger.com/trademarks.

3 Description

3.1 Product overview



1 Function plate, Extend
2 Eye protector (optional)
3 Face protector
4 Front plate
5 Helmet shell
6 Dräger HPS FlashLight (optional)
7 Front adjusting ring
8 Spacer (optional)
9 Front support ring with head padding
10 COM holder (optional)
11 Rear support ring
12 Rear head padding
13 Harness
14 Rear adjusting ring
15 Head straps with comfort pad
16 Adjusting wheel

3.2 Functional description

3.2.1 Basic version

The fire helmets in the Dräger HPS SafeGuard series consist of a paint-coated helmet shell made of glass-fibre reinforced thermosetting plastic featuring the following properties:

- It is resistant to ageing
- It is resistant to sunlight (UV radiation).
- Beyond that it offers excellent resistance against weathering, as well as against chemical and thermal influences.

The fire helmets are always fitted with a face protector.

The internal helmet components include the cushioning system, harness, size adjustment system and carrying system. The internal helmet components can be used to adjust the helmet to meet the size and shape of the wearer's head.

The fire helmets can be worn alone or with a respiratory protective mask.

The fire helmets are available in one size and various configurations.

3.2.2 Configurable components

The following components are optionally available and supplement the helmet system:

- Dräger HPS FlashLight
  This lamp is attached to the front plate. If this lamp is not attached, the front plate will include a cover.
- Standard helmet lamp
  This lamp is attached to the Extend function plate. The associated lamp holder can be locked in different positions.
- Visors
  An eye protector may be additionally used.
- COM holder
  A helmet communication system (e.g. Dräger HPS-COM) can be plugged into the COM holder.
- Neck guard
  The neck guard is available in various versions.
- Spacer
  The spacer is used for pre-adjustment in the following cases:
  - for very small heads. For a head circumference of 60 cm or more, inserting the spacer may result in reduced wearing comfort.
  - for changing the helmet's centre of gravity
  - for increasing the distance of the visor from the face
- Reflective strips
  The reflective strips are available in various versions.
- Comfort pad
  The comfort pad can be attached to the head straps. It improves wearing comfort.

3.3 Intended use

The fire helmets are solely intended for the following operations:

- Fire fighting in buildings
- Forest and wildland firefighting
- Rescue and recovery work
- Tasks associated with traffic accidents
- All other tasks that are included in the remit of a fire fighter, with the exception of riding a motorbike.

Any other use is prohibited.

The fire helmets protect the head and face from the following:

- Impacts
- Sharp objects
- Impact of solid bodies
- Contact with liquids, corrosive chemicals and molten metals
- Radiant heat
- Flames
- contact with electrical current

Depending on the kind of operation, the fire helmets can be equipped with the corresponding type of visor. The visors are marked differently according to their intended use (see "Marking of the visors", page 1). An appropriate risk assessment should be carried out in order to determine which visor can be used for the intended purpose.

The visors are solely intended for use with the fire helmets of the Dräger HPS SafeGuard series.

3.4 Approvals

The fire helmets are approved in accordance with:

- (EU) 2016/425
- Regulation 2016/425 on personal protective equipment as amended to apply in GB
- EN 443:2008
- EN 16471:2014
- EN 16473:2014
- ISO 16073-5:2019
- ISO 11999-5:2015
- ISO 18639-5:2018
- CA 47035 (Brazil)

Declarations of conformity:

see www.draeger.com/product-certificates

The visors are approved in accordance with:

- EN 14458:2018

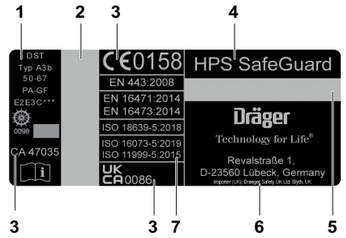
Only use the fire helmets with accessories that are explicitly approved for use with the fire helmet. If any accessory not intended for use with this helmet or additional personal protective equipment is worn, the fire helmets may no longer fully conform to their approval standards.

The fire helmets meet the requirements of the above-mentioned European standards for the restraint system if the chin strap supplied by Dräger is worn and adjusted in accordance with these instructions for use.

3.5 Explanation of type-identifying marking and symbols

The type identical identification mark is located on the packaging or the individual components.

3.5.1 Label inside the fire helmet



1 Monitoring body
2 Standards according to which the approval was granted
3 Serial number
4 Various markings (see table below)
5 Type of helmet
6 Date of manufacture
7 Manufacturer

Marking	Explanation of the marking
DST	Manufacturer code Dräger Safety AG & Co. KGaA
A3b	Type: Three-quarter shell helmet
50 - 67	Head circumference in cm
PA-GF	Code designation of material (glass-fibre reinforced, thermosetting plastic)
	Symbol for "See instructions for use"
Optional properties and markings	
E2, E3	Electrical insulating property
C	Chemical permeation resistance
***	The fire helmet is designed for use in temperatures as low as -30 °C

3.5.2 Label on the packaging

Marking	Explanation of the marking
HPS SafeGuard	Helmet
REF	Order number
LOT	Serial number
CE0158 UKCA0086	Approving bodies
CA47.035	Brazil mandatory identification
	Symbol for "See instructions for use"

3.5.3 Marking of the visors

The marking of the visors is engraved. It has the following meaning:

Marking	Explanation of the marking
EN 14458:2018	European Standard upon which the approval is based
DST	Manufacturer code Dräger Safety AG & Co. KGaA
PC	Code designation of material (polycarbonate)
3701547	Example for order number of the visor
	Manufacturing month and year
=	Symbol indicating suitability for general use (protection against mechanical, liquid chemical and simple physical hazards)
+	Symbol indicating increased thermal performance (advanced protection against higher heat and flame exposure)
	Symbol for rating as face protection
	Symbol for rating as eye protection
R1, R2	Protection level with regard to radiant heat for visors with increased thermal performance
BT	Durability with regard to an impact of medium strength (120 m/s) at extreme temperatures
E1, E3	Electrical properties
	Symbol for "See instructions for use"
Optional properties and markings	
-30 °C; +120 °C	Extreme temperatures the visor is approved for
K	Increased scratch resistance (test procedure: Sand trickling test according to EN 168:2001)
N	Resistance to fogging
5-4.1	Sun protection filter according to EN 172:2002
2C-1.2	UV protection filter according to EN 170:2002 with colour recognition
2-1.2	UV protection filter according to EN 170:2002
2-4	UV protection filter according to EN 170:2002
2-2.5	UV protection filter according to EN 170:2002

4 Use

4.1 Prerequisites

The visor must be selected and approved for the intended application.

4.2 Preparations for use

In order to ensure that the fire helmet fits properly, the position (see "Adjusting the helmet position", page 1) and support ring (see "Adjusting the support ring", page 1) need to be adjusted.

The harness and support ring must be adjusted to the head size for daily use (see "Adjustments for daily use", page 1).

⚠ WARNING
Risk of injury due to improperly adjusted helmet!
The protective effect of the fire helmet is only achieved if the fire helmet fits perfectly

► Adjust the helmet position, harness and support ring correctly.
► All add-on pieces must be correctly attached to the fire helmet.

The following preparatory work is optional and are therefore described in the Technical manual:

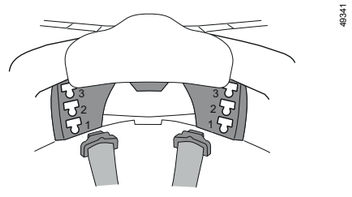
- Mounting the neck guard
- Attaching the COM holder and helmet communication system
- Attaching the COM connector protection
- Attaching the Dräger HPS FlashLight
- Attaching the lamp holder for standard helmet lamps
- Attaching the Dräger HPS BuddyLight

4.2.1 Adjusting the helmet position

⚠ CAUTION
Risk of injury due to improperly adjusted head straps!
The head straps are part of the helmet's overall cushioning system. Injuries can occur if they are not adjusted correctly.

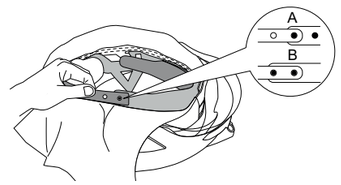
► Tighten the head straps at the rear adjusting ring until they are optimally tensioned and there is a gap between the straps and the cushioning element in the helmet shell.

• Adjust the head straps at the attachment points at the rear adjusting ring. Make sure that the edge of the open visor does not impair the field of view. If the fire helmet is to be worn with a respiratory protective mask, the support ring should sit approx. 2 cm above the eyebrows to ensure the mask is correctly sealed around the face.

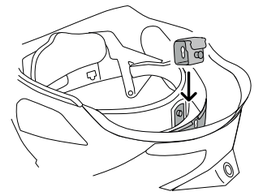


4.2.2 Adjusting the support ring

1. Pre-adjust the front and rear support rings to the correct head size (position A: large head circumference, position B: small head circumference). Select the same position on both sides.



2. If necessary, attach the spacer between the front adjusting ring and the front support ring.



4.2.3 Adjustments for daily use

When adjusting the helmet, take into consideration whether a flame protection hood or respiratory protective mask will be used.

1. Put on the fire helmet.
2. Close the chin strap.
3. Adjust the length of the chin strap at the quick-release buckle. Fix the end of the chin strap with the hook-and-loop fastener. The chin strap should lie evenly under the chin.
4. Adjust the length of the neck straps using the adjusting clamps. The neck straps should lie evenly at the neck.
5. Turn the adjusting wheel until the support ring fits snugly against your head.

4.3 During use

The helmet does not contain any materials that are known to cause allergic reactions. In individual cases, however, allergic reactions could still occur in very sensitive people.
The visors may transfer physical impacts to corrective glasses and damage them.
Full protection is only achieved when the face protector is locked into the lowest position.

4.4 After use

Check usability as follows:

- Check helmet shell, internal helmet components, chin strap and accessories. Replace defective parts.
- Check visors. In the event of visible damage or impaired vision (e.g. due to scratches, discolouring), the visors should be replaced.
- Check the paint coating of the fire helmet for damage.
  The special self-extinguishing coating is the most important factor for the thermal performance of the helmet. Damaged coating might shorten the usage period. Small surface scratches or damage to the paint work do not reduce the protective effect. They can be repaired with repair paint.

Fire helmets that are out of use, or cannot be repaired any more must be destroyed for safety reasons.

Trained personnel or Dräger can check and decide if a damaged fire helmet is still suitable for use or can be repaired.

⚠ CAUTION
The protective effect is reduced after impact!
If the fire helmet absorbs the energy of an impact, it can get damaged or destroyed.

► Even if the damage is not visible at first, the fire helmet must be replaced after a heavy bump or impact. Damaged or impact-stressed fire helmets may no longer be used. This also applies if no external damage is visible.

5 Maintenance

5.1 Maintenance table

For information on maintenance measures, see the technical manual.

5.2 Cleaning and disinfecting

Generally, cleaning the fire helmet after use will suffice. The internal helmet components can be disinfected as necessary.

For information on machine cleaning, see the technical manual.

NOTICE

Risk of material damage

Do not use any solvents (e. g. acetone, alcohol) or cleaning agents containing abrasive particles for cleaning and disinfecting.

► Only apply the methods described in this document and only use the mentioned cleaning agents and disinfectants. Other agents, dosages and exposure times may cause damage to the product.

► Do not disinfect coated visors. The disinfection agents damage the coating.

For information on suitable cleaning agents and disinfectants and their specifications, see document 9100081 at www.draeger.com/IFU.

5.2.1 Cleaning

NOTICE

If the fire helmet is to be cleaned in an immersion bath, only submerge the helmet briefly in order to prevent the anti-fog coating from dissolving.

1. Remove electronic components from the fire helmet and clean separately.
2. Prepare a cleaning solution consisting of water and a detergent. Alternatively, lukewarm soapy water or water can be used.
3. Clean the helmet components as follows:
   - Helmet shell:
     Clean using a soft cloth and the cleaning solution. Rinse with clear water and wipe dry.
   - Visors:
     Clean with lukewarm soapy water or water. Rinse off with clear water. The outside of the visor can be wiped dry. Allow the inside of the visor to air-dry. The visors can also be cleaned with alcohol-free glass cleaner or kp-Comfort.
   - Textiles:
     Clean with the cleaning solution. Rinse with clear water. Allow to air-dry.
   - Neck guard:
     See Technical Manual.

5.2.2 Disinfection

1. Prepare a disinfectant bath containing water and a disinfectant.
2. Place all parts to be disinfected into the disinfectant bath (duration: 15 minutes).
3. Thoroughly rinse all parts under running water.
4. Dry all parts in the air or in a drying cabinet (temperature: max. 60 °C). Do not expose to direct sunlight.

5.3 Maintenance work

The following maintenance work is normally not carried out by the fireman, but by service personnel. They are therefore described in the Technical manual:

– Replacing the internal helmet components
– Replacing the face protector
– Replacing the eye protector
– Replacing the function plate
– Replacing the front cover
– Replacing the reflective strips
– Replacing the rear head padding
– Repairing paint on the helmet shell
– Replacing the neck guard mount
– Replacing O-rings

6 Transport

The fire helmet can be transported in a helmet case or in a helmet bag. The fire helmet might also be transported in a cardboard box if it is packed in a PE-bag or wrapped in a sufficient amount of wrapping paper. All attached parts can remain attached to the fire helmet for transport. The visors should be folded up (not the in-use position).

7 Storage

Store the fire helmet in a cool and dry sheltered place. Avoid exposure to direct sunlight during storage in order to prevent any possible long term damage to the coating due to ultraviolet radiation (especially in case of fluorescent paint).

Store visors in a clean, dry area out of direct sunlight and high humidity.

Avoid storage near aggressive substances (e.g. solvents, fuels).

8 Disposal

8.1 Life span

Check the usability after every use (see "After use", page 1). The service life of the helmet and visors depends on the following factors:

– Materials used
– Environment in which the helmet is used and stored
– Type of strain
– Intended use
– Compliance with maintenance instructions

Further information can be obtained from Dräger.

8.2 Disposal information

The materials used for the fire helmet and accessories comply with Directive 2011/65/EU (RoHS) and Regulation (EC) 1907/2006 (REACH) and may be disposed of in accordance with national regulations.

9 Technical data

9.1 Fire helmet

Material of the helmet shell	Fibreglass-reinforced, thermoplastic (PA-GF)
Weight:	Basic version: approx. 1250 g
Storage conditions:	
Temperature	0 °C to 45 °C
rel. humidity	up to 90 %

9.2 Visors

Visor material	Polycarbonate
Optical class	1

9.3 Chemical permeation resistance

The fire helmets and visors are resistant to the following chemicals:

Chemical	Concentration (mass-%)
Sulphur dioxide	30 % (aqueous solution)
Sodium hydroxide	10 % (aqueous solution)
p-Xylene	undiluted
Butane-1-ol	undiluted
n-heptane	undiluted

10 Order list

Name and description	Order number
Dräger HPS SafeGuard Technical manual (obtainable only in connection with a training session)	9300252

Optionally available accessories (e.g., neck guards, helmet lamps, lamp holders, reflective strips, individual customer markings) and spare parts are listed in spare parts list 1412.665.

The spare parts list 1412.665 is available on request.