

## 3% Fluoroprotein Foam Concentrate

### Description

Chemguard CP2305 is a UL Listed fluoroprotein foam concentrate containing fluorinated surfactants in a carefully formulated protein foam liquid base. This ensures the production of a stabilised fluid foam which will cover a burning hydrocarbon fuel surface rapidly.

The water soluble fluorosurfactant makes the foam hydrocarbon repellent and reduces the amount of burning particles absorbed by the foam in fighting the hydrocarbon fuel fires.

Once the fire extinction has been achieved the high stability of the foam blanket ensures against the risk of reignition and provides excellent protection against burn back should any inaccessible pockets of fire remain.

Chemguard CP2305 should be used at 3% proportioned solution (3 part concentrate in 97 parts of water) in fresh or seawater.

#### TYPICAL PROPERTIES

Appearance	Dark Brown Liquid
Specific gravity @ 20°C	1.15g/ml +/- 0.03
Viscosity approx @ 20°C	10 +/- 4 Centistokes
pH	5.5 - 8.0
Freezing Point	5F (-15C)
Sediment Volume	0.20% maximum

### Listings and Approvals

UL standard 162 (7th Edition)

- Foam quality tests
- Class B Hydrocarbon fuel fire tests
- Foam identification tests
- Tests of shipping containers

### Application

Chemguard CP2305 is intended for use on class B hydrocarbon fuel fires such as oil, diesel and aviation fuels. Chemguard CP2305 can be applied directly onto the fire surface and is also suitable for sub surface injection. It is compatible with all dry chemical powders and can be used in powder/foam twin agent systems.



#### PROPORTIONING

Chemguard CP2305 can easily be proportioned at the correct dilution using conventional equipment such as:

- Inline inductors.
- Balanced pressure, variable flow proportioning systems
- Bladder tanks.
- Around the pump proportioning systems.
- Water turbine driven foam proportioners.
- Self inducing branch pipes and nozzles.

### Performance

The fire performance of Chemguard CP2305 is measured against standards such as Underwriters Laboratories Standard UL 162 at 3% concentration. The expansion will vary depending on the performance characteristics of the equipment used. Typical expansion ratios range from 6:1 to 12:1 for air aspirating discharge devices, 5:1 to 7:1 for foam chambers and 2:1 to 4:1 for sub surface injection.

#### STORAGE

Stored in original unbroken packaging the product will have a long shelf life. The recommended storage temperature range of Chemguard CP2305 is from -15°C to 49°C. As with all protein based materials, shelf life will be dependant on storage temperatures and conditions. Freezing and thawing will have no impact on the performance. If stored in an atmospheric storage tank, a ¼" layer of mineral oil may be added to minimize evaporation after the tank is filled. Refer to the manual of the storage tank for more information.

#### SAFETY AND HANDLING

See our corresponding "Material Safety data sheet".

#### COMPATIBILITY

There are no specifications or standards which address the subject of compatibility of different manufacturer's brands of fluoroprotein foam concentrates. In an emergency or if the manufacturer has supporting test data to substantiate that the mixture meets the same requirements as the individual component concentrates, they may be mixed together in the same storage vessel.

Different types of foam concentrates, i.e., AFFF and fluoroprotein base should not be mixed under any circumstances.

### Ordering Information

Part No.	Container	Weight
CP2305P	6.6 Gal (25L)	67 lb
CP2305D	55 Gal (208L)	555 lb

*CP2605 can be supplied in cans, drums, totes or Bulk  
Contact us for Bulk delivery details.*

### Quality Assurance

CP2305 – as with all TYCO Products – is subject to very stringent quality controls throughout all stages of production, from incoming raw to the complete product and is manufactured in an ISO 9001:2008 controlled facility. Quality assurance is therefore guaranteed.

## 6% Fluoroprotein Foam Concentrate

### Description

The CHEMGUARD brand 6% Fluoroprotein Foam Concentrate, CP2605, is formulated from hydrolyzed protein, fluorochemical surfactants, foam stabilizers (metal salts), bactericide, corrosion inhibitors, freezing point depressants and solvents. It is transported and stored as a concentrate to provide ease of use and considerable savings in weight and space.

It is intended for use as a 6% proportioned solution either in fresh, salt or hard water. The correct proportioning ratio is 6 parts of concentrate to 94 parts of water.

Two fire extinguishing mechanisms are in effect when using fluoroprotein foams. First, a foam blanket prevents the release of fuel vapor. Second, the water content of the foam provides a cooling effect.

#### TYPICAL PROPERTIES

Fire Classes	B
Shape and colour	Brown, Clear Liquid
Smell	Characteristic, Protein
Density (20°C)	1.14 ± 0.02 g/ml
pH (concentrate, 20°C)	6.0 - 8.0
Viscosity (20°C)	6.0 ± 4.0 mm <sup>2</sup> /s
Sediment	≤ 0.25%
Admixing ratio	6% Vol.
Expansion Ratio (EN 1568-3)	≥ 7.0
Drain Time 25%, (20°C, EN1568-3)	≥ 5:00
Drain Time 50%, (20°C, EN1568-3)	≥ 9:00
Expansion	Low, (Medium)
Freezing Point	≤ -15 °C
Pour Point	≤ -12 °C
Recommended Storage/ Usage Temperature	-10 to +60 °C

### Listings and Approvals

CP2605 is approved or listed according to:

- EN 1568:2008 Part. 3
- UL-162

National Fire  
Equipment Ltd.



### Application

CP2605 Fluoroprotein Foam Concentrate is intended for use on Class B hydrocarbon fuels having low water solubility, such as various crude oils, gasoline, diesel fuels, aviation fuels, etc. It is not suitable for use on fuels having appreciable water solubility (polar solvents), i.e., methyl and ethyl alcohol, acetone and methyl ethyl ketone. This concentrate can be used only with air aspirating type discharge devices.

It can also be used with foam compatible dry chemical extinguishing agents without regard to the order of application, to provide even greater fire protection capability.

#### PROPORTIONING

CP2605 can be used by most conventional foam equipment such as:

- Balance pressure pump proportioning equipment
- Bladder tank and related proportioners
- Around-the-pump proportioners
- Fixed and portable In-line venturi type inductor
- Fixed or handline nozzles or Monitors with fixed induction/pick up tubes

### Performance

CP2605 is measured against specifications and standards such as EN 1568:2008 part 3 and UL-162.

#### FOAMING PROPERTIES

When used with fresh or salt water or water of any hardness at the correct dilution and with most conventional foam making equipment, the expansion ratio will vary depending on the performance characteristics of the equipment. Air aspirating discharge devices produce expansion ratios from 6 to 1 to 12 to 1 depending primarily on type and flow rate. In general, the higher the flow rate the higher the expansion ratio. Therefore, monitors and foam chambers normally produce higher expansion ratios than foam water sprinkler heads and hand held type nozzles.

tyco  
Fire Protection Products

Typical expansion ratios for foam chambers are in the range of 5 to 1 to 7 to 1, and for foam water sprinkler heads in the range of 3 to 1 to 6 to 1. Subsurface injection is a special case where generally speaking, expansion ratios of 2 to 1 to 3 to 1 are preferred but up to 4 to 1 is also effective.

#### STORAGE

CP2605 Fluoroprotein foam has an operational temperature range of -10°C and +60°C. Limited exposure to temperatures above +60°C does not affect the firefighting performance.

When stored in the packaging supplied (polyethylene drums or pails) within the temperature limits specified, or in equipment recommended by the manufacturer as part of the foam system, the shelf life of CP2605 Fluoroprotein foam concentrate is generally in excess of 10 years.

If the product is frozen during storage or transportation, thawing will render the product completely usable.

The factors affecting shelf life and stability for CHEMGUARD brand foam agents are discussed in detail in our Technical Bulletin for storage recommendation.

#### SAFETY AND HANDLING

See our corresponding "Material Safety data sheet".

#### COMPATIBILITY

There are no specifications or standards which address the subject of compatibility of different manufacturer's brands of fluoroprotein foam concentrates. In an emergency or if the manufacturer has supporting test data to substantiate that the mixture meets the same requirements as the individual component concentrates, they may be mixed together in the same storage vessel.

Different types of foam concentrates, i.e., AFFF and fluoroprotein base should not be mixed under any circumstances.

## Ordering Information

Part No.	Container	Weight
CP2605P	6.6 Gal (25L)	67 lb
CP2605D	55 Gal (208L)	555 lb

*CP2605 can be supplied in cans, drums, totes or Bulk  
Contact us for Bulk delivery details.*

## Quality Assurance

CP2605 – as with all TYCO Products – is subject to very stringent quality controls throughout all stages of production, from incoming raw to the complete product and is manufactured in an ISO 9001:2008 controlled facility. Quality assurance is therefore guaranteed.

## Description

Chemguard 3% FFFP (Part No. CP4302) is a film forming fluoroprotein foam concentrate (FFFP) containing hydrolysed protein and preservatives, together with a blend of fluorinated surfactants to achieve the maximum synergistic effect. The blend of fluorochemicals selected is effective in reducing the surface tension of water as well as the interfacial tension between water and oil sufficiently low to give stable film on the surface of the fuel and as a result it gives fire extinguishing rates superior to those obtained with synthetic based compounds. Incorporation of protein in the formulation produces a thick visible blanket which has exceptional burnback resistance. Chemguard CP4302 should be used as a 3% proportioned solution in fresh or sea water. The correct proportioning or mixture ratio is 3 parts of concentrate and 97 parts of water.

## Application

Chemguard CP4302 is intended for use on B class hydrocarbon fuel fires such as oil, petroleum and aviation fuels. Chemguard CP4302 can be applied directly onto the fire surface and is also suitable for subsurface injection. It is compatible with all dry powders and can be used in dry powder/foam twin agent systems.

## Proportioning

Chemguard CP4302 can easily be proportioned at the correct dilution using conventional equipment such as:

- Inline inductors.
- Balanced pressure, variable flow proportioning systems.
- Bladder tanks.
- Around the pump proportioning systems.
- Water turbine driven foam proportioners.
- Self - inducting branch pipes and nozzles.

## Fire Performance & Foaming

The fire performance of Chemguard CP4302 is measured against standards such as United Kingdom Ministry of Defence Standard 42-40 at 3% concentration. The expansion will vary depending on the performance characteristics of the equipment used. When tested to DEF 42-40 at 3% concentration, the expansion will be at least 7:1 (normally 8:1) with a 25% drainage time of not less than 3.5 minutes (normally 4.5 minutes).

## International Approvals:

- EN 1568 part 3, Class 1/A

## Storage/Shelf Life

Stored in original unbroken packaging the product will have a long shelf life. The recommended storage temperature range of Chemguard CP4302 is from -15°C to 49°C and shelf life in excess of 5 years will be found in temperate climates. As with all protein based materials, shelf life will be dependant on storage temperatures and conditions. If the product is frozen during storage or transportation, thawing will render the product completely usable. Chemguard CP4302 may be stored in plastic or metal containers. For bulk storage, mild steel tanks may be used provided the internal surface is coated with a protective coating such as bitumen. The use of galvanised material should be avoided for storage vessels and pipe work involving the concentrate.

## Technical Data

Appearance	Dark brown Liquid
Specific gravity @ 20°C	Minimum 1,17 +/- 0,01g/ml
Viscosity approx @ 20.0°C	<20 c.st
pH	7.5 +/- 1.0
Freezing point	- 17°C
Pour point	- 15°C
Suspended sediment (v/v)	Less than 0.25%
Surface tension (dynes/cm)	18.0 approx
Interfacial Tension	< 4 mN/m

## Ordering Information

Part No.	Container	Weight
CP4302P	6.6 Gal (25L)	67 lbs
CP4302D	55 Gal (208L)	550 lbs

## Description

Chemguard CP4303 is a film forming fluoroprotein foam concentrate (FFFP) containing hydrolysed protein and preservatives, together with a blend of fluorinated surfactants to achieve the maximum synergistic effect. The blend of fluorochemicals selected is effective in reducing the surface tension of water as well as the interfacial tension between water and oil sufficiently low to give stable film on the surface of the fuel and as a result it gives fire extinguishing rates superior to those obtained with synthetic based compounds. Incorporation of protein in the formulation produces a thick visible blanket which has exceptional burnback resistance.

Chemguard CP4303 should be used as a 3% proportioned solution in fresh or sea water. The correct proportioning or mixture ratio is 3 parts of concentrate and 97 parts of water.

## Application

Chemguard CP4303 is intended for use on B class hydrocarbon fuel fires such as oil, petroleum and aviation fuels. Chemguard CP4303 can be applied directly onto the fire surface and is also suitable for subsurface injection. It is compatible with all dry powders and can be used in dry powder/foam twin agent systems.

## Proportioning

Chemguard CP4303 can easily be proportioned at the correct dilution using conventional equipment such as:

- Inline inductors.
- Balanced pressure, variable flow proportioning systems.
- Bladder tanks.
- Around the pump proportioning systems.
- Water turbine driven foam proportioners.
- Self - inducting branch pipes and nozzles.

## Fire Performance & Foaming

The fire performance of Chemguard CP4303 is measured against ICAO LEVEL B as well as standards such as United Kingdom Ministry of Defence Standard 42-40 at 6% concentration. The expansion will vary depending on the performance characteristics of the equipment used. When tested to DEF 42-40 at 6% concentration, the expansion will be at least 7:1 (normally 8:1) with a 25% drainage time of not less than 3.5 minutes (normally 4.5 minutes).

## International Approvals:

- ICAO level B

## Storage/Shelf Life

Stored in original unbroken packaging the product will have a long shelf life. The recommended storage temperature range of Chemguard CP4303 is from -15°C to 49°C and shelf life in excess of 5 years will be found in temperate climates. As with all protein based materials, shelf life will be dependant on storage temperatures and conditions. If the product is frozen during storage or transportation, thawing will render the product completely usable. Chemguard CP4303 may be stored in plastic or metal containers. For bulk storage, mild steel tanks may be used provided the internal surface is coated with a protective coating such as bitumen. The use of galvanised material should be avoided for storage vessels and pipe work involving the concentrate.

## Technical Data

Appearance	Dark brown Liquid
Specific gravity @ 20°C	1.19 +/- 0.01 g/ml
Viscosity approx @ 20.0°C	<20 c.st
pH	7.5 +/- 1.0
Freezing point	- 17°C
Pour point	- 15°C
Suspended sediment (v/v)	Less than 0.25%
Surface tension (dynes/cm)	18.0 approx
Interfacial Tension	< 4 mN/m

## Ordering Information

Part No.	Container	Weight
CP4303P	6.6 Gal (25L)	67 lbs
CP4303D	55 Gal (208L)	550 lbs

## Description

Chemguard CP4603 is a film forming fluoroprotein foam concentrate (FFFP) containing hydrolysed protein and preservatives, together with a blend of fluorinated surfactants to achieve the maximum synergistic effect. The blend of fluorochemicals selected is effective in reducing the surface tension of water as well as the interfacial tension between water and oil sufficiently low to give stable film on the surface of the fuel and as a result it gives fire extinguishing rates superior to those obtained with synthetic based compounds. Incorporation of protein in the formulation produces a thick visible blanket which has exceptional burnback resistance.

Chemguard CP4603 should be used as a 6% proportioned solution in fresh or sea water. The correct proportioning or mixture ratio is 6 parts of concentrate and 94 parts of water.

## Application

Chemguard CP4603 is intended for use on B class hydrocarbon fuel fires such as oil, petroleum and aviation fuels. CP4603 can be applied directly onto the fire surface and is also suitable for subsurface injection. It is compatible with all dry powders and can be used in dry powder/foam twin agent systems.

## Proportioning

Chemguard CP4603 can easily be proportioned at the correct dilution using conventional equipment such as:

- Inline inductors.
- Balanced pressure, variable flow proportioning systems.
- Bladder tanks.
- Around the pump proportioning systems.
- Water turbine driven foam proportioners.
- Self - inducting branch pipes and nozzles.

## Fire Performance & Foaming

The fire performance of Chemguard CP4603 is measured against ICAO LEVEL B as well as standards such as United Kingdom Ministry of Defence Standard 42-40 at 6% concentration. The expansion will vary depending on the performance characteristics of the equipment used. When tested to DEF 42-40 at 6% concentration, the expansion will be at least 7:1 (normally 8:1) with a 25% drainage time of not less than 3.5 minutes (normally 4.5 minutes).

## International Approvals:

- ICAO level B

## Storage/Shelf Life

Stored in original unbroken packaging the product will have a long shelf life. The recommended storage temperature range of CP4603 is from -15°C to 49°C and shelf life in excess of 5 years will be found in temperate climates. As with all protein based materials, shelf life will be dependant on storage temperatures and conditions. If the product is frozen during storage or transportation, thawing will render the product completely usable.

Chemguard CP4603 may be stored in plastic or metal containers. For bulk storage, mild steel tanks may be used provided the internal surface is coated with a protective coating such as bitumen. The use of galvanised material should be avoided for storage vessels and pipe work involving the concentrate.

## Technical Data

Appearance	Dark brown Liquid
Specific gravity @ 20°C	1.15 +/- 0.01 g/ml
Viscosity approx @ 20.0°C	<20 c.st
pH	7.5 +/- 1.0
Freezing point	- 17°C
Pour point	- 15°C
Suspended sediment (v/v)	Less than 0.15%
Surface Tension (dynes/cm)	<18.0 approx
Interfacial Tension (dynes/cm)	> 4.5

## Ordering Information

Part No.	Container	Weight
CP4603P	6.6 Gal (25L)	67 lbs
CP4603D	55 Gal (208L)	550 lbs