



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008
This SDS is for generic information purposes and does not reflect required country specific information for OEL

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supercedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM

Pure substance/mixture Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Building and construction work

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Company Name

Bostik Technology GmbH
Industriestraße 1-7
D-01936 Schwepnitz
Germany
schwepnitz.info@bostik.com
Tel. +49 (0)35797 646 0
Fax +49 (0)35797 646 190

E-mail address SDS.box-EU@bostik.com

1.4. Emergency telephone number

Emergency Telephone 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Vapours)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Respiratory sensitisation	Category 1 - (H334)
Skin sensitisation	Category 1 - (H317)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity — single exposure	Category 3 - (H335)
Specific target organ toxicity — repeated exposure	Category 2 - (H373)
Aerosols	Category 1 - (H222, H229)

2.2. Label elements

Contains Diphenylmethane-diisocyanate, isomers and homologues

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1



Signal word
Danger

Hazard statements

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure
H222 - Extremely flammable aerosol
H229 - Pressurised container: May burst if heated

Precautionary Statements - EU (§28, 1272/2008)

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P260 - Do not breathe mist/vapours/spray
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves and eye/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P405 - Store locked up
P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Special provisions concerning the labelling of certain mixtures

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. Type A1 according to standard EN 14387) is used. As from 24 August 2023 adequate training is required before industrial or professional use. Never expose cans to direct or uncontrolled heat. Never use above 25 °C can temperature. If necessary, cool the can in a water bath. When the two components are mixed (activated) in the 2-component can, heat of reaction develops. After activation, process the can immediately within the time period specified by the manufacturer. Otherwise there is danger of bursting.

Additional information

This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

In case of insufficient ventilation and/or through use, the formation of a explosive/highly flammable mixture is possible. During transportation by car the cans should stand upright in the cargo space. When foaming the propellants are highly flammable. The mentioned hazards are valid for the non-reacted content of the can or of the fresh foam. May be harmful if swallowed.

PBT & vPvB

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	EC No.	CAS No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)	REACH registration number
Diphenylmethane-diisocyanate, isomers and homologues 40 - <80 %	618-498-9	9016-87-9	STOT SE 3 (H335) STOT RE 2 (H373) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Carc. 2 (H351) Acute Tox. 4 (H332)	STOT SE 3 :: C>=5% Skin Irrit. 2 :: C>=5% Eye Irrit. 2 :: C>=5% Resp. Sens. 1 :: C>=0.1%	-	-	[7]
Reaction products of phosphoryl trichloride and 2-methyloxirane 10 - <20 %	807-935-0	1244733-77-4	Acute Tox. 4 (H302) Aquatic Chronic 3 (H412)	-	-	-	01-2119486772-26-XXXX
Isobutane 5 - <10 %	200-857-2	75-28-5	Flam. Gas 1 (H220) Press. Gas	-	-	-	01-2119485395-27-XXXX
Dimethyl ether 5 - <10 %	204-065-8	115-10-6	Flam. Gas 1 (H220) Press. Gas	-	-	-	01-2119472128-37-XXXX
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched (>=2.5 EO) 1 - <5 %	931-138-8	69011-36-5	Acute Tox. 4 (H302) Eye Dam. 1 (H318)	Eye Irrit. 2 :: C>1% Eye Dam. 1 : C>10%	-	-	[7]
Halogenated polyetherpolyol 1 - <2.5 %	-	68441-62-3	Eye Irrit. 2 (H319) Acute Tox. 4 (H302)	-	-	-	[7]
Benzene, C10-13-alkyl derivatives 1 - <2.5 %	267-051-0	67774-74-7	Asp. Tox. 1 (H304) (EUH066)	-	-	-	01-2119489372-31-XXXX
Butane 0.1- <1 %	203-448-7	106-97-8	Flam. Gas 1 (H220) Press. Gas	-	-	-	01-2119474691-32-XXXX

Full text of H- and EUH-phrases: see section 16

NOTE [7] - No registration number is given for this substance because it is a polymer exempted from registration according to the provisions of Article 2(9) of REACH. All monomers or other substances within the polymer are registered or exempt from registration

Acute Toxicity Estimate

No information available

Chemical name	EC No	CAS No	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Diphenylmethane-diisocyanate, isomers and	618-498-9	9016-87-9	-	-	1.5	-	-

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Chemical name	EC No	CAS No	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
homologues							
Reaction products of phosphoryl trichloride and 2-methyloxirane	807-935-0	1244733-77-4	632	-	-	-	-
Isobutane	200-857-2	75-28-5	-	-	-	-	-
Dimethyl ether	204-065-8	115-10-6	-	-	-	-	-
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched (>=2.5 EO)	931-138-8	69011-36-5	1000	-	-	-	-
Halogenated polyetherpolyol	-	68441-62-3	1337	-	-	-	-
Benzene, C10-13-alkyl derivatives	267-051-0	67774-74-7	-	-	-	-	-
Butane	203-448-7	106-97-8	-	-	-	-	-

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	Notes
Isobutane - 75-28-5	C,U
Dimethyl ether - 115-10-6	U
Butane - 106-97-8	C,U

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	IF exposed or concerned: Get medical advice/attention.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing.
Skin contact	Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Do NOT induce vomiting. Drink 1 or 2 glasses of water. Call a doctor or poison control centre immediately.
Self-protection of the first aider	Remove all sources of ignition. Use personal protective equipment as required. Do not breathe vapour or mist. Avoid contact with skin, eyes or clothing.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms May cause allergy or asthma symptoms or breathing difficulties if inhaled.

4.3. Indication of any immediate medical attention and special treatment needed

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically. Delayed health effects. Delayed pulmonary edema may occur.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Keep product and empty container away from heat and sources of ignition. Risk of ignition. In the event of fire, cool tanks with water spray. Containers may explode when heated.

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Hydrogen cyanide. Isocyanates. Hydrogen chloride.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Take precautionary measures against static discharges. Remove all sources of ignition. Ensure adequate ventilation. Do not breathe vapour or mist. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Advice on safe handling Ensure adequate ventilation. Do not breathe vapour or mist. Take precautionary measures against static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Avoid contact with skin, eyes or clothing. Do not puncture or incinerate cans. Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands and face before breaks and immediately after handling the product. Take off all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Protect from sunlight. Store in a well-ventilated place. Keep at a temperature not exceeding 50 °C. Keep away from open flames, hot surfaces and sources of ignition. Store in accordance with the particular national regulations. Do not contaminate food or feed stuffs.

7.3. Specific end use(s)

Specific use(s)
Building and construction work. Aerosol.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

Other information Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Only European Community Occupational Exposure Limits will be shown in this document. Please refer to regional SDS for further information.

Chemical name	European Union
Dimethyl ether 115-10-6	TWA: 1000 ppm TWA: 1920 mg/m ³

Derived No Effect Level (DNEL) No information available

Derived No Effect Level (DNEL)			
Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
worker Long term Systemic health effects	Inhalation	8.2 mg/m ³	
worker Short term Systemic health effects	Inhalation	22.6 mg/m ³	
worker Long term Systemic health effects	Dermal	2.91 mg/kg bw/d	

Dimethyl ether (115-10-6)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
worker	Inhalation	1894 mg/m ³	

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
 Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
 Revision Number 1

Long term Systemic health effects			
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Halogenated polyetherpolyol (68441-62-3)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
worker Long term Systemic health effects	Inhalation	6 mg/m ³	
worker Long term Systemic health effects	Dermal	0.87 mg/kg bw/d	

Derived No Effect Level (DNEL)			
Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Consumer Long term Systemic health effects	Inhalation	1.45 mg/m ³	
Consumer Short term Systemic health effects	Inhalation	5.6 mg/m ³	
Consumer Long term Systemic health effects	Dermal	1.04 mg/kg bw/d	
Consumer Long term Systemic health effects	Oral	0.52 mg/kg bw/d	
Consumer Short term Systemic health effects	Oral	2 mg/kg bw/d	

Dimethyl ether (115-10-6)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Consumer Long term Systemic health effects	Inhalation	471 mg/m ³	

Halogenated polyetherpolyol (68441-62-3)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Consumer Long term Systemic health effects	Inhalation	1.5 mg/m ³	
Consumer Long term Systemic health effects	Dermal	0.435 mg/kg bw/d	

Predicted No Effect Concentration (PNEC) No information available.

Predicted No Effect Concentration (PNEC)	
Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)	
Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	0.32 mg/l
Marine water	0.032 mg/l

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Sewage treatment plant	19.1 mg/l
Freshwater sediment	11.5 mg/kg dry weight
Marine sediment	1.15 mg/kg dry weight
Soil	0.34 mg/kg dry weight

Dimethyl ether (115-10-6)	
Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	0.155 mg/l
Marine water	0.016 mg/l
Microorganisms in sewage treatment	160 mg/l
Freshwater sediment	0.681 mg/kg dry weight
Soil	0.45 mg/kg dry weight

8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.
Hand protection	Wear suitable gloves. Glove thickness > 0.7mm. Butyl rubber. Nitrile rubber. The breakthrough time for the mentioned glove material is in general greater than 480 min. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Wear a respirator conforming to EN 140 with Type A filter or better.
Recommended filter type:	Organic gases and vapours filter conforming to EN 14387. AX.

Environmental exposure controls Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Aerosol
Appearance	Aerosol
Colour	Red
Odour	Slight, Characteristic.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	Not applicable . °C	
Initial boiling point and boiling range	Not applicable, Aerosol .	Not applicable, Aerosol
Flammability	Not applicable for liquids .	
Flammability Limit in Air		None known
Upper flammability or explosive limits	18.6 Vol%	
Lower flammability or explosive limits	1.7 Vol%	
Flash point	Not applicable, Aerosol .	Not applicable, Aerosol
Autoignition temperature	. °C	
Decomposition temperature		None known
pH	No data available	None known.
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	
Water solubility	Immiscible in water.	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapour pressure	6 bar	bar @ 23 °C

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Relative density	No data available	None known
Bulk Density	No data available	
Liquid Density	1.038 g/cm ³	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

Solid content (%)	No information available	
VOC content	No data available 165.2 g/L	European directive n°2010/75/UE

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

Minimum Ignition Temperature 235 Not applicable .
(°C)

Minimum Ignition Temperature (°C) 235

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Product cures with moisture.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.
Sensitivity to static discharge Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Heating causes rise in pressure with risk of bursting.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks. Excessive heat.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents. Water. Alcohols. Amines.

10.6. Hazardous decomposition products

Hazardous decomposition products None under normal use conditions. Stable under recommended storage conditions.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supercedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Inhalation	Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Specific test data for the substance or mixture is not available. May cause sensitisation in susceptible persons. (based on components). May cause irritation of respiratory tract. Harmful by inhalation.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause sensitisation by skin contact. Causes skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. May cause additional affects as listed under "Inhalation". Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing. Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.
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Acute toxicity

Based on available data, the classification criteria are not met

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	2,348.50 mg/kg
ATEmix (inhalation-dust/mist)	3.26 mg/l
ATEmix (inhalation-vapour)	18.90 mg/l

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Diphenylmethane-diisocyanate, isomers and homologues	LD50 > 10000 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus)	=1.5 mg/L (Rattus) 4 h
Reaction products of phosphoryl trichloride and 2-methyloxirane	LD50 > 500 - 2000 mg/kg (males); LD50 = 632 mg/kg (females)(Rattus)	LD50 >2000 mg/Kg (Rattus) (OECD 402)	LD50 >7 mg/L (4h)(Rattus) (OECD 403)
Isobutane	-	-	=658 mg/L (Rattus) 4 h
Dimethyl ether	-	-	=164000 ppm (Rattus) 4 h
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydrox y-, branched (>=2.5 EO)	LD50 (Rattus) > 300 - <= 2000 mg/kg	LD50 (Oryctolagus cuniculus) > 2000 mg/kg	> 1.6 mg/L (Rat) 4 h
Halogenated polyetherpolyol	LD50 = 1337 mg/Kg (Rattus) (OECD 401)	-	-
Benzene, C10-13-alkyl derivatives	>5000 mg/kg (Rattus)	> 10200 mg/kg (Oryctolagus cuniculus)	-
Butane	-	-	=658 g/m ³ (Rattus) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 404: Acute Dermal	Rabbit				Mild skin irritant

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supercedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Irritation/Corrosion					
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Halogenated polyetherpolyol (68441-62-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Dermal		96 hours	Non-irritant

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Halogenated polyetherpolyol (68441-62-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit				irritant

Respiratory or skin sensitisation May cause sensitisation by inhalation. May cause sensitisation by skin contact.

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Species	Exposure route	Results
OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay	Mouse		sensitising

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

Component Information

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Carcinogenic

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
 Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
 Revision Number 1

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea	M-Factor	M-Factor (long-term)
Diphenylmethane-diisocyanate, isomers and homologues 9016-87-9	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	CL50 (96h) >1000 mg/L (Danio rerio)	-	EC50 (24H) >1000 mg/L Daphnia magna		
Reaction products of phosphoryl trichloride and 2-methyloxirane 1244733-77-4	EC50 (72h) = 82 mg/L (Pseudokirchneriella subcapitata) OECD 201	LC50 (96h) = 51 mg/L (Pimephales promelas) Static	-	LC50 (48h) = 131 mg/L Daphnia magna		
Dimethyl ether 115-10-6	-	LC50: >4.1g/L (96h, Poecilia reticulata)	-	> 4400 mg/L (Daphnia) (NEN 6501)		
Halogenated polyetherpolyol 68441-62-3	-	LC50: =560mg/L (96h, Poecilia reticulata)	-	-		
Benzene, C10-13-alkyl derivatives 67774-74-7	-	-	-	EC50 (48 h) > 0.041 mg/L (Daphnia magna) EU Method C.2 (Acute Toxicity for Daphnia)		

12.2. Persistence and degradability

Persistence and degradability No information available.

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Exposure time	Value	Results
OECD Test No. 302C: Inherent Biodegradability: Modified MITI Test (II)	28 days	0% biodegradation	Not readily biodegradable

Halogenated polyetherpolyol (68441-62-3)

Method	Exposure time	Value	Results
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)	28 days	16%	Not readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Reaction products of phosphoryl trichloride and 2-methyloxirane	2.68

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Isobutane	2.8
Dimethyl ether	-0.18
Halogenated polyetherpolyol	3.3
Benzene, C10-13-alkyl derivatives	6.4
Butane	2.31

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Reaction products of phosphoryl trichloride and 2-methyloxirane	The substance is not PBT / vPvB
Isobutane	The substance is not PBT / vPvB PBT assessment does not apply
Dimethyl ether	The substance is not PBT / vPvB
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched (≥ 2.5 EO)	The substance is not PBT / vPvB
Halogenated polyetherpolyol	The substance is not PBT / vPvB
Benzene, C10-13-alkyl derivatives	The substance is not PBT / vPvB
Butane	The substance is not PBT / vPvB PBT assessment does not apply

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.
European Waste Catalogue	08 05 01* waste isocyanates 16 05 04* gases in pressure containers (including halons) containing dangerous substances 17 06 04 insulation materials other than those mentioned in 17 06 01 and 17 06 03
Other information	Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1 UN number or ID number	UN1950
14.2 Proper Shipping Name	Aerosols
14.3 Transport hazard class(es)	2

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Labels	2.1
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, 2, (D)
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	190, 327, 344, 625
Classification code	5F
Tunnel restriction code	(D)
Limited quantity (LQ)	1 L

IMDG

14.1 UN number or ID number	UN1950
14.2 Proper Shipping Name	Aerosols
14.3 Transport hazard class(es)	2.1
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, 2.1
14.5 Marine pollutant	NP
14.6 Special Provisions	63,190, 277, 327, 344, 381, 959
Limited Quantity (LQ)	See SP277
EmS-No	F-D, S-U
14.7 Maritime transport in bulk according to IMO instruments	Not applicable

Air transport (ICAO-TI / IATA-DGR)

14.1 UN number or ID number	UN1950
14.2 Proper Shipping Name	Aerosols, flammable
14.3 Transport hazard class(es)	2.1
14.4 Packing group	Not regulated
Description	UN1950, Aerosols, flammable, 2.1
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	A145, A167, A802
Limited quantity (LQ)	30 kg G
ERG Code	10L

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Check whether measures in accordance with Directive 94/33/EC for the protection of young people at work must be taken.

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)

SVHC: Substances of Very High Concern for Authorisation:

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

EU-REACH (1907/2006) - Annex XVII - Substances subject to Restriction

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Chemical name	CAS No	Restricted substance per REACH Annex XVII
Diphenylmethane-diisocyanate, isomers and homologues	9016-87-9	56 74.

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Diisocyanates	--	74
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Substance subject to authorisation per REACH Annex XIV

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)

Dangerous substance category per Seveso Directive (2012/18/EU)

P3a - FLAMMABLE AEROSOLS

P3b - FLAMMABLE AEROSOLS

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Persistent Organic Pollutants

Not applicable

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
Diphenylmethane-diisocyanate, isomers and homologues 9016-87-9	RG 62
Isobutane 75-28-5	RG 84
Dimethyl ether 115-10-6	RG 84
Butane 106-97-8	RG 84

Germany

Ordinance on Industrial Safety and Health - Germany - BetrSichV

Flammable liquid (R10), EEC: refer to Annex III No. 1 (fire and explosion hazards) and § 7 paragraph 3

Water hazard class (WGK) slightly hazardous to water (WGK 1)

TRGS - 510 Storage Class Storage Class 2B : Aerosols

Netherlands

List of Carcinogenic, mutagenic and reproductive toxin substances in accordance with Inspectorate SZW (Netherlands)

Denmark

Registration number(s) (P-no.) No information available

MAL-Code 1-3

Norway

Registration number(s) (PRN-no.) No information available

15.2. Chemical safety assessment

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Chemical Safety Assessments have been carried out by the Reach registrants for substances registered at >10 tpa. No
Chemical Safety Assessment has been carried out for this mixture.

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H220 - Extremely flammable gas
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure

SVHC: Substances of Very High Concern for Authorisation:

PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals

vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals

STOT RE: Specific target organ toxicity - Repeated exposure

STOT SE: Specific target organ toxicity - Single exposure

EWC: European Waste Catalogue

LOW: List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IATA: International Air Transport Association

ICAO: ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air

IMDG: International Maritime Dangerous Goods

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail

Legend SECTION 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
AGW	Occupational exposure limit value	BGW	Biological limit value
Ceiling	Maximum limit value	*	Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
Acute aquatic toxicity	On basis of test data
Chronic aquatic toxicity	On basis of test data
Aspiration hazard	Calculation method
Ozone	Calculation method
	On basis of test data

Key literature references and sources for data used to compile the SDS

European Food Safety Authority (EFSA)

European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)

European Chemicals Agency (ECHA) (ECHA_API)

EPA (Environmental Protection Agency)

SAFETY DATA SHEET

QF221HG DEN BRAVEN ALPHA DUO QUICK FOAM
Supersedes Date: 05-Aug-2022

Revision date 03-Aug-2022
Revision Number 1

Acute Exposure Guideline Level(s) (AEGL(s))
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
NIOSH (National Institute for Occupational Safety and Health)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set

Prepared By Product Safety & Regulatory Affairs

Revision date 03-Aug-2022

Training Advice AS FROM 24 AUGUST 2023 ADEQUATE TRAINING IS REQUIRED BEFORE INDUSTRIAL OR PROFESSIONAL USE

Further information No information available

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet