



Safety Data Sheet dated 10/12/2019, version 4
Regulation (EU) 2015/830

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

1.1. Product identifier

Identification of the mixture:

Trade name: CHALLENGER
Trade code: 685.000 C

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

1.3. Details of the supplier of the safety data sheet

Company:

BOERO BARTOLOMEO S.p.A. - Via Macaggi 19 - 16121 Genova - Tel. +39 010 55001 - Fax
+39 010 5500305 - CF/P. IVA/REG. IMPRESE DI GENOVA 00267120103

Competent person responsible for the safety data sheet:

sicurezzaprodotti@boero.it

1.4. Emergency telephone number

BOERO BARTOLOMEO S.p.A. - Tel.+39 010 55001

opening hours: Monday - Tuesday 9.00 am - 5.00 pm

UK: in an emergency the enquirer should call NHS 111/24/Direct (free-to-call medical helplines)
or a doctor.

MALTA: tel. 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

Flam. Liq. 3, H226 Flammable liquid and vapour.

Acute Tox. 4, H332 Harmful if inhaled.

Skin Irrit. 2, H315 Causes skin irritation.

Eye Irrit. 2, H319 Causes serious eye irritation.

Skin Sens. 1, H317 May cause an allergic skin reaction.

STOT SE 3, H335 May cause respiratory irritation.

STOT RE 2, H373 May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

685.000 C/4

Page n. 1 of 12

Safety Data Sheet

CHALLENGER

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P370+P378 In case of fire use CO₂ or chemical powder. Never use water.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container according to local regulations.

Special Provisions:

PROF For professional use only.

EUH204 Contains isocyanates. May produce an allergic reaction.

PACK2 The packing must have tactile indications of danger for blind people.

Contains

aliphatic polyisocyanate

xylene [4]

ethylbenzene

hexamethylene-di-isocyanate

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

Adverse physicochemical, human health and environmental effects:

The main adverse physical-chemical effects for human health and the environment are listed in accordance with Sections 9 to 12 of the safety data sheet

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

>= 70% - < 80% aliphatic polyisocyanate

CAS: 28182-81-2, EC: 939-340-8

Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

>= 12.5% - < 15% 2-methoxy-1-methylethyl acetate

REACH No.: 01-2119475791-29-XXXX, Index number: 607-195-00-7, CAS: 108-65-6, EC: 203-603-9

Flam. Liq. 3 H226 Flammable liquid and vapour.

685.000 C/4

Page n. 2 of 12

Safety Data Sheet

CHALLENGER

>= 10% - < 11% xylene [4]

REACH No.: 01-2119488216-32-XXXX, CAS: 1330-20-7, EC: 215-535-7

Flam. Liq. 3 H226 Flammable liquid and vapour.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

>= 2% - < 3% ethylbenzene

Index number: 601-023-00-4, CAS: 100-41-4, EC: 202-849-4

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

STOT RE 2 H373 H373.5

Acute Tox. 4 H332 Harmful if inhaled.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

>= 0.1% - < 0.25% hexamethylene-di-isocyanate

REACH No.: 01-2119457571-37-xxxx, Index number: 615-011-00-1, CAS: 822-06-0, EC: 212-485-8

Acute Tox. 4 H302 Harmful if swallowed.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Skin Irrit. 2 H315 Causes skin irritation.

Resp. Sens. 1,1A,1B H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Sens. 1,1A,1B H317 May cause an allergic skin reaction.

Acute Tox. 1 H330 Fatal if inhaled.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Do NOT induce vomiting.

Give nothing to eat or drink.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

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

Causes skin irritation.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

685.000 C/4

Page n. 3 of 12

Safety Data Sheet

CHALLENGER

Treatment:
None

SECTION 5: Firefighting measures

- 5.1. Extinguishing media
 - Suitable extinguishing media:
In case of fire use CO₂ or chemical powder. Never use water.
 - Extinguishing media which must not be used for safety reasons:
Do not use water jets
None in particular.
- 5.2. Special hazards arising from the substance or mixture
 - Avoid inhaling the fumes.
- 5.3. Advice for firefighters
 - Use suitable breathing apparatus .
 - Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Retain contaminated washing water and dispose it.
 - Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures
 - Wear personal protection equipment.
 - Remove all sources of ignition.
 - Wear breathing apparatus if exposed to vapours/dusts/aerosols.
 - Provide adequate ventilation.
 - Use appropriate respiratory protection.
 - See protective measures under point 7 and 8.
- 6.2. Environmental precautions
 - Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
 - Retain contaminated washing water and dispose it.
 - In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
 - Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up
 - Wash with plenty of water.
- 6.4. Reference to other sections
 - See also section 8 and 13

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling
 - Avoid contact with skin and eyes, inhalation of vapours and mists.
 - Adequately ventilated premises.
 - Use localized ventilation system.
 - Contaminated clothing should be changed before entering eating areas.
 - Do not eat or drink while working.
 - See also section 8 for recommended protective equipment.
- 7.2. Conditions for safe storage, including any incompatibilities
 - Always keep the containers tightly closed.
 - Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
 - Keep away from food, drink and feed.

685.000 C/4

Page n. 4 of 12

Safety Data Sheet

CHALLENGER

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

Adequately ventilated premises.

7.3. Specific end use(s)

See section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

EU - TWA(8h): 275 mg/m³, 50 ppm - STEL: 550 mg/m³, 100 ppm - Notes: Skin

HR - TWA(8h): 275 mg/m³, 50 ppm

HRKGV1 - STEL: 550 mg/m³, 100 ppm

xylene [4] - CAS: 1330-20-7

EU - TWA(8h): 221 mg/m³, 50 ppm - STEL: 442 mg/m³, 100 ppm - Notes: Skin

AGS - TWA(8h): 221 mg/m³ - STEL((15 min)): 442 mg/m³ - Notes: (Anm. H: Ämnet kan lätt upptas genom huden)

ACGIH - TWA(8h): 100 ppm - STEL: 150 ppm - Notes: A4, BEI - URT and eye irr, CNS impair

AGS - TWA(8h): 221 mg/m³ - STEL((15 min)): 442 mg/m³ - Notes: (Anm. H: Ämnet kan lätt upptas genom huden)

VLE1 - TWA(8h): 211 mg/m³, 50 ppm

VLE - STEL: 442 mg/m³, 100 ppm - Notes: Skin

ethylbenzene - CAS: 100-41-4

EU - TWA(8h): 442 mg/m³, 100 ppm - STEL: 884 mg/m³, 200 ppm - Notes: Skin

AGS - TWA(8h): 200 mg/m³ - STEL((15 min)): 450 mg/m³

ACGIH - TWA(8h): 20 ppm - Notes: A3, BEI - URT irr, kidney dam (nephropathy), cochlear impair

VLE1 - TWA(8h): 442 mg/m³, 100 ppm

VLE - STEL: 884 mg/m³, 200 ppm

hexamethylene-di-isocyanate - CAS: 822-06-0

ACGIH - TWA(8h): 0.005 ppm - Notes: URT irr, resp sens

DNEL Exposure Limit Values

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Worker Industry: 153.5 mg/kg - Worker Professional: 153.5 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Industry: 275 mg/kg - Worker Professional: 275 mg/kg - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 54.8 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 33 mg/kg - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 1.67 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

xylene [4] - CAS: 1330-20-7

Worker Industry: 289 mg/m³ - Consumer: 174 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Industry: 289 mg/m³ - Consumer: 174 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Industry: 180 mg/kg - Consumer: 108 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

685.000 C/4

Page n. 5 of 12

Safety Data Sheet

CHALLENGER

Worker Industry: 77 mg/m³ - Consumer: 14.8 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 1.6 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
hexamethylene-di-isocyanate - CAS: 822-06-0

Worker Industry: 0.035 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, local effects

Worker Industry: 0.07 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects

PNEC Exposure Limit Values

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Target: Fresh Water - Value: 0.635 mg/L

Target: Marine water - Value: 0.0635 mg/L

Target: Microorganisms in sewage treatments - Value: 100 mg/L

Target: Freshwater sediments - Value: 3.29 mg/kg

Target: Marine water sediments - Value: 0.329 mg/kg

xylene [4] - CAS: 1330-20-7

Target: Fresh Water - Value: 0.327 mg/L

Target: Marine water - Value: 0.327 mg/L

Target: Freshwater sediments - Value: 12.46 mg/kg

Target: Marine water sediments - Value: 12.46 mg/kg

Target: Microorganisms in sewage treatments - Value: 6.58 mg/L

Biological Exposure Index

xylene [4] - CAS: 1330-20-7

Value: 1.50 mg/L - medium: Blood - Sampling Period: End of turn

Value: 1.50 gg creatinina - medium: Blood - Sampling Period: End of turn

ethylbenzene - CAS: 100-41-4

Value: 1.50 mg/L - medium: Blood - Sampling Period: DU

Value: 2 ppm - medium: Air at the end of exhalation - Sampling Period: A

Value: 1.50 gg creatinina - medium: Urine - Biological Indicator: 78 - Sampling Period: End of turn; End of working week

8.2. Exposure controls

Eye protection:

Use goggles/ facemask certified UNI EN 166.

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Suitable protective clothing is required for complete skin protection: for example coveralls with long sleeves and trousers, rubber boots and apron, etc., according to UNI EN 14325.

Protection for hands:

Use protective gloves: waterproof rubber gloves certified UNI EN 374. Nitrile gloves provide good protection. Use care in selecting a penetration time of the gloves longer than the foreseen usage time.

Respiratory protection:

Use adequate protective respiratory equipment: a carbon filter mask with filters certified UNI EN 149 or dust masks certified UNI EN 140. Filters of types A and P types may be considered.

Use respiratory protection where ventilation is insufficient or exposure is prolonged.

Thermal Hazards:

None

Environmental exposure controls:

See sections 6 and 13

Appropriate engineering controls:

None

685.000 C/4

Page n. 6 of 12

Safety Data Sheet

CHALLENGER

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Appearance : | liquid |
| Odour: | N.A. |
| Colour: | transparent |
| pH: | N.A. |
| Melting point / freezing point: | N.A. |
| Boiling point (°C): | bp>35 °C |
| Initial boiling point and boiling range: | N.A. |
| Solid/gas flammability: | N.A. |
| Upper/lower flammability or explosive limits: | N.A. |
| Vapour density: | N.A. |
| Flash point: | 40 °C |
| Evaporation rate: | N.A. |
| Vapour pressure: | N.A. |
| Specific gravity (Kg/L) 20°C : | 1.0700 |
| Methodology: | SPECIFIC WEIGHT BY MEANS OF PICNOMETER (gr / cm3). |
| Solubility in water: | N.A. |
| Lipid solubility: | N.A. |
| Partition coefficient (n-octanol/water): | N.A. |
| Auto-ignition temperature: | N.A. |
| Decomposition temperature: | N.A. |
| Kinematic viscosity at 40°C (mm ² /s): | kv > 20,5 |
| Viscosity (23°C+0.5°C): | min 45 - max 55 |
| Methodology: | UNI EN ISO 2431 (ex DIN 53211 s) |
| Spindle: | 3 |
| Speed (rpm): | 10 |

9.2. Other information

No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

None

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:

CHALLENGER

685.000 C/4

Page n. 7 of 12

Safety Data Sheet

CHALLENGER

- a) acute toxicity
The product is classified: Acute Tox. 4 H332
- b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
- c) serious eye damage/irritation
The product is classified: Eye Irrit. 2 H319
- d) respiratory or skin sensitisation
The product is classified: Skin Sens. 1 H317
- e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
- f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met
- g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met
- h) STOT-single exposure
The product is classified: STOT SE 3 H335
- i) STOT-repeated exposure
The product is classified: STOT RE 2 H373
- j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat > 5000 mg/kg
Test: LD50 - Route: dermal - Species: rabbit > 5000 mg/kg
Test: LD50 - Route: inhalation - Species: rat > 2000 Ppm - Duration: 3 h

xylene [4] - CAS: 1330-20-7

- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat > 3523 mg/kg
Test: LD50 - Route: dermal - Species: rabbit > 2000 mg/kg
Test: LC50 - Route: inhalation - Species: rat > 27.571 mg/l - Duration: 4h

- b) skin corrosion/irritation:
Test: Skin Irritant Positive

- c) serious eye damage/irritation:
Test: Eye Irritant Positive

ethylbenzene - CAS: 100-41-4

- a) acute toxicity:
Test: LC50 - Route: inhalation - Species: rat = 17.2 mg/l - Duration: 4h

hexamethylene-di-isocyanate - CAS: 822-06-0

- a) acute toxicity:
Test: LC50 - Route: inhalation - Species: rat = 0.124 mg/l - Duration: 4h - Notes: OCSE 403

SECTION 12: Ecological information

12.1. Toxicity

685.000 C/4

Page n. 8 of 12

Safety Data Sheet CHALLENGER

Adopt good working practices, so that the product is not released into the environment.

CHALLENGER

Not classified for environmental hazards

Based on available data, the classification criteria are not met

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 96

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia > 500 mg/l - Duration h: 48

xylene [4] - CAS: 1330-20-7

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 2.6 ml/l - Duration h: 96

Endpoint: EC50 - Species: Algae = 2.2 mg/l - Duration h: 72

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish > 1.3 mg/l - Notes: 56 d

Endpoint: NOEC - Species: Daphnia = 0.74 mg/l - Notes: 7 d

12.2. Persistence and degradability

There is no data available on the preparation itself.

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Biodegradability: Readily biodegradable - Test: Oxygen consumption - %: 83 - Notes: 28 d

xylene [4] - CAS: 1330-20-7

Biodegradability: Readily biodegradable - Notes: solubilità in acqua=146 mg/l

12.3. Bioaccumulative potential

There is no data available on the preparation itself.

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Bioaccumulation: Not bioaccumulative - Notes: log Pow=1,2

xylene [4] - CAS: 1330-20-7

Test: Kow - Partition coefficient 3.2 - Notes: mg/l

Test: BCF - Bioconcentration factor 25.9 - Notes: mg/l

12.4. Mobility in soil

There is no data available on the preparation itself.

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Mobility in soil: Mobile

xylene [4] - CAS: 1330-20-7

Test: Koc 2.73 - Notes: mg/l

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force. Directives 91/156/CEE, 91/689/CEE, 94/62/CE.

EWC CODE 080111

Do not empty into drains, ground or waterways. Dispose of product residues and related containers at a collection point for hazardous or special waste or, where appropriate, through an authorized waste disposal company.

Safety Data Sheet

CHALLENGER

SECTION 14: Transport information

- 14.1. UN number
UN 1263
- 14.2 Proper shipping name: Paint related materia.
- 14.3 Transport hazard class(es) and Packing Group:
3 PG III
- 14.4. Environmental hazards
Marine Pollutant: -
- 14.5. Special precautions for user
None
- Other informations
Land transport ADR/RID
ADR Classification code: F1
Maximum quantity for Limited Quantities: 5L/Kg
Tunnel code :D/E
Transport category: 3
- Maritime transport (IMDG)
Maximum quantity for Limited Quantities: 5L/Kg
EmS number: F-E/S-E
Stowage provisions: A
- Air transport(IATA/ICAO)
Maximum quantity for Limited Quantities: 5L/Kg
Pkg. inst. passenger and cargo aircraft: 355
Pkg. inst. cargo aircraft only: 366
Erg-code: 3L

SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Dir. 89/391/CEE and subsequent amendments (Risks related to chemical agents at work and Occupational exposure limit values). Directive 1999/13/EC and subsequent amendments (limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations). Regulation (CE) n. 1907/2006 , Regulation (CE) 830/2015 and subsequent amendments (concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals - REACH). Regulation (CE) n.1272/2008 and subsequent amendments (on classification, labeling and packaging of substances and mixtures - CLP).
International Maritime Dangerous Goods Code, IATA Dangerous Goods Regulation, International Carriage of Dangerous Goods by Road (ADR).
- Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:
Restriction 3 is not applicable because the mixture does not fall within the restrictions mentioned in Annex XVII of EC Regulation No. 1907/2006.
Restriction 40 is not applicable because the mixture does not fall within the restrictions mentioned in Annex XVII of EC Regulation No. 1907/2006.
- Where applicable, refer to the following regulatory provisions :
Directive 2004/42/CE on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products.
Regulation UE No 649/2012 concerning the export and import of dangerous chemicals.
Regulation UE n. 528/2012 concerning the making available on the market and use of biocidal products.
Directive 2012/18/EU (Seveso III)
Regulation (EC) No. 648/2004 (detergents).
Directive 2004/42/CE on the limitation of emissions of volatile organic compounds due to the

685.000 C/4

Page n. 10 of 12

Safety Data Sheet

CHALLENGER

use of organic solvents in certain paints and varnishes and vehicle refinishing products.
Regulation (EC) No 689/2006 concerning the export and import of dangerous chemicals.
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1
Product belongs to category: P5c

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

| Hazard class and hazard category | Code | Description |
|----------------------------------|---------------|--|
| Flam. Liq. 2 | 2.6/2 | Flammable liquid, Category 2 |
| Flam. Liq. 3 | 2.6/3 | Flammable liquid, Category 3 |
| Acute Tox. 1 | 3.1/1/Inhal | Acute toxicity (inhalation), Category 1 |
| Acute Tox. 4 | 3.1/4/Dermal | Acute toxicity (dermal), Category 4 |
| Acute Tox. 4 | 3.1/4/Inhal | Acute toxicity (inhalation), Category 4 |
| Acute Tox. 4 | 3.1/4/Oral | Acute toxicity (oral), Category 4 |
| Asp. Tox. 1 | 3.10/1 | Aspiration hazard, Category 1 |
| Skin Irrit. 2 | 3.2/2 | Skin irritation, Category 2 |
| Eye Irrit. 2 | 3.3/2 | Eye irritation, Category 2 |
| Resp. Sens. 1,1A,1B | 3.4.1/1-1A-1B | Respiratory Sensitisation, Category 1,1A,1B |
| Skin Sens. 1 | 3.4.2/1 | Skin Sensitisation, Category 1 |
| Skin Sens. 1,1A,1B | 3.4.2/1-1A-1B | Skin Sensitisation, Category 1,1A,1B |
| STOT SE 3 | 3.8/3 | Specific target organ toxicity - single exposure, Category 3 |
| STOT RE 2 | 3.9/2 | Specific target organ toxicity - repeated exposure, Category 2 |
| Aquatic Chronic 3 | 4.1/C3 | Chronic (long term) aquatic hazard, category 3 |

Paragraphs modified from the previous revision:

SECTION 3: Composition/information on ingredients

685.000 C/4

Page n. 11 of 12

Safety Data Sheet

CHALLENGER

SECTION 11: Toxicological information
SECTION 12: Ecological information
SECTION 16: Other information

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

| | |
|-------------|--|
| ADR: | European Agreement concerning the International Carriage of Dangerous Goods by Road. |
| ATE: | Acute Toxicity Estimate |
| ATEmix: | Acute toxicity Estimate (Mixtures) |
| CAS: | Chemical Abstracts Service (division of the American Chemical Society). |
| CLP: | Classification, Labeling, Packaging. |
| DNEL: | Derived No Effect Level. |
| EINECS: | European Inventory of Existing Commercial Chemical Substances. |
| GefStoffVO: | Ordinance on Hazardous Substances, Germany. |
| GHS: | Globally Harmonized System of Classification and Labeling of Chemicals. |
| IATA: | International Air Transport Association. |
| IATA-DGR: | Dangerous Goods Regulation by the "International Air Transport Association" (IATA). |
| ICAO: | International Civil Aviation Organization. |
| ICAO-TI: | Technical Instructions by the "International Civil Aviation Organization" (ICAO). |
| IMDG: | International Maritime Code for Dangerous Goods. |
| INCI: | International Nomenclature of Cosmetic Ingredients. |
| KSt: | Explosion coefficient. |
| LC50: | Lethal concentration, for 50 percent of test population. |
| LD50: | Lethal dose, for 50 percent of test population. |
| PNEC: | Predicted No Effect Concentration. |
| RID: | Regulation Concerning the International Transport of Dangerous Goods by Rail. |
| STEL: | Short Term Exposure limit. |
| STOT: | Specific Target Organ Toxicity. |
| TLV: | Threshold Limiting Value. |
| TWA: | Time-weighted average |
| WGK: | German Water Hazard Class. |