

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

1.1. Product identifier

Product form : Mixture
Product name : TF Dry
Product code : 729
Type of product : Aerosol
Article number : 72904

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Function or use category : Lubricants and additives

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

BARDAHL NL - OCD NEDERLAND BV
Maxwellstraat 41
3316 GP Dordrecht - Nederland
T 0031 78 651 2322 - F 0031 78 617 4848
rjonker@bardahl.nl - www.bardahl.nl

1.4. Emergency telephone number

Emergency number : +31 (0) 6 2908 2010
During office hours: 8.30 t/m 17:00 h

Country	Official advisory body	Address	Emergency number	Comment
	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP] Mixtures/Substances: SDS EU 2015: According to Regulation (EU) 2015/830 (REACH Annex II)

Aerosol, Category 1 H222;H229
Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 2 H319
Specific target organ toxicity — Single exposure, Category 3, Narcosis H336
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

The product has to be labeled due to the calculation procedure of the General Classification guideline for preparations of the EU", DIR.". Pressurized container. Specific target organ toxicity — Single exposure, Category 3, Narcosis.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

Signal word (CLP) :

Danger

Hazardous ingredients

: propan-2-ol; isopropyl alcohol; isopropanol

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Hazard statements (CLP)	: H222 - Extremely flammable aerosol. H229 - Pressurised container: May burst if heated. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness.
Precautionary statements (CLP)	: P501 - Dispose of contents/container to a facility for the collection of hazardous or special waste. P403 - Store in a well-ventilated place. P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. P302+P352 - IF ON SKIN: Wash with plenty of water/.... P304+P340 - IF INHALED: Remove person to fresh air and keep 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. P261 - Avoid breathing vapours, spray, mist. P271 - Use only outdoors or in a well-ventilated area. P251 - Do not pierce or burn, even after use. P211 - Do not spray on an open flame or other ignition source. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P102 - Keep out of reach of children. P101 - If medical advice is needed, have product container or label at hand.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
propan-2-ol; isopropyl alcohol; isopropanol	(CAS-No.) 67-63-0 (EC-No.) 200-661-7 (EC Index-No.) 603-117-00-0 (REACH-no) 01-2119457558-25	25 - 50	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Butane	(CAS-No.) 106-97-8 (EC-No.) 203-448-7 (REACH-no) 01-2119474691-32	25 - 50	Flam. Gas 1, H220 Press. Gas (Comp.), H280
Aliphatic hydrocarbons >30%		> 30	Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
propane (Note U)	(CAS-No.) 74-98-6 (EC-No.) 200-827-9 (REACH-no) 01-2119486944-21	10 - 25	Flam. Gas 1, H220 Press. Gas
2-aminoethanol; ethanolamine	(CAS-No.) 141-43-5 (EC-No.) 205-483-3 (EC Index-No.) 603-030-00-8 (REACH-no) 01-2119486455-28	1 - 2.5	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314

Specific concentration limits:

Name	Product identifier	Specific concentration limits
2-aminoethanol; ethanolamine	(CAS-No.) 141-43-5 (EC-No.) 205-483-3 (EC Index-No.) 603-030-00-8 (REACH-no) 01-2119486455-28	(C >= 5) STOT SE 3, H335

Note U (Table 3): When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case.

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Assure fresh air breathing. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures after skin contact	: No irritant effect.

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First-aid measures after eye contact : Ensure adequate flushing of eyes by separating eyelids with the fingers. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Do NOT induce vomiting. Get immediate medical advice and attention.

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

No additional information available

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water haze. Powder. Carbon dioxide. Alcohol resistant foam.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting : Wear suitable respiratory equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Keep public away from danger area.

6.1.2. For emergency responders

Protective equipment : Wear proper protective equipment.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Ventilate area. Do not use water for cleaning.

6.4. Reference to other sections

See Headings 7 and 8. See Heading 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Good ventilation of the workplace required. Handle and open container with care. Do not spray on an open flame or other ignition source. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Container under pressure. Do not drill or burn even after use. Do not expose to temperatures exceeding 50 °C/ 122 °F.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool place. Government regulations on storing packagings with pressurized containers must be observed. Keep container tightly closed.

Incompatible materials : Direct sunlight. heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)		
EU	IOELV TWA (mg/m ³)	983 mg/m ³
EU	IOELV TWA (ppm)	400 ppm
EU	IOELV STEL (mg/m ³)	1230 mg/m ³
EU	IOELV STEL (ppm)	500 ppm
United Kingdom	WEL TWA (mg/m ³)	999 mg/m ³ Propan-2-ol; United Kingdom; Timeweighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	400 ppm Propan-2-ol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	1250 mg/m ³ Propan-2-ol; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)		
United Kingdom	WEL STEL (ppm)	500 ppm Propan-2-ol; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

propane (74-98-6)		
EU	IOELV TWA (ppm)	1000 ppm
Netherlands	Suffocating.	

2-aminoethanol; ethanolamine (141-43-5)		
EU	IOELV TWA (mg/m ³)	7.5 mg/m ³
EU	IOELV TWA (ppm)	3 ppm
EU	IOELV STEL (mg/m ³)	15 mg/m ³
EU	IOELV STEL (ppm)	6 ppm

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)		
DNEL/DMEL (Workers)		
Long-term - systemic effects, dermal		888 mg/kg bodyweight/day
Long-term - systemic effects, inhalation		500 mg/m ³
DNEL/DMEL (General population)		
Long-term - systemic effects, oral		26 mg/kg bodyweight/day
Long-term - systemic effects, dermal		319 mg/kg bodyweight/day
Long-term - local effects, inhalation		89 mg/m ³

8.2. Exposure controls

Personal protective equipment:

Gloves. Protective goggles.

Hand protection:

Use solvent-resistant gloves. Selection of the glove material on consideration of the penetration times, permeability and degradation. Gloves material: Nitrile. Refer to manufacturer's information.

Eye protection:

Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product.

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Combined gas/dust mask with filter type AX/P2

Personal protective equipment symbol(s):



Other information:

Remove contaminated clothing immediately. Keep away from food, drink and animal feedingstuffs. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not breathe gas, fumes, vapour or spray. Avoid contact with skin and eyes.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Aerosol.
Colour	: According to product specification.
Odour	: characteristic.

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Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: -44 °C
Flash point	: -97 °C
Auto-ignition temperature	: 365 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 8300 hPa
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.664 g/cm ³ (20°C)
Solubility	: Practically not miscible. Organic solvent:86.4%
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Explosive vapour/air mixtures may be formed. Product is not explosive.
Oxidising properties	: No data available
Explosive limits	: 1.5 - 12 vol %

9.2. Other information

VOC content : 573.7 g/l (85.00%)

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

No decomposition if used according to specifications.

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
Acute toxicity (dermal)	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
Acute toxicity (inhalation)	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 20 mg/l/4h

Butane (106-97-8)

LC50 inhalation rat (mg/l)	658 mg/l/4h
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propane (74-98-6)

LC50 inhalation rat (mg/l)	20 mg/l/4h
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2-aminoethanol; ethanolamine (141-43-5)	
LD50 oral rat	2050 mg/kg
LD50 dermal rabbit	1000 mg/kg
Skin corrosion/irritation	: No irritant effect
Serious eye damage/irritation	: Irritating.
Respiratory or skin sensitisation	: No sensitisation responses were observed
Germ cell mutagenicity	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
Carcinogenicity	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
Reproductive toxicity	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
STOT-single exposure	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
STOT-repeated exposure	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
Aspiration hazard	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
Chronic aquatic toxicity	: Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

LC50 fish 1	9640 mg/l (Pimephales promelas)
LC50 other aquatic organisms 1	> 10000 mg/l Daphnia magna
EC50 Daphnia 1	> 9700 mg/l (24h)
EC50 other aquatic organisms 1	> 1000 mg/l (Algen 72h)

Butane (106-97-8)

LC50 fish 1	680 mg/l (96h)
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12.2. Persistence and degradability

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

Biodegradation	98 %
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Butane (106-97-8)

Persistence and degradability	Readily biodegradable.
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propane (74-98-6)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

Log Pow	0.05 25°C
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12.4. Mobility in soil

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Ecology - soil	Prevent entry to sewers and public waters.
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Butane (106-97-8)

Ecology - soil	If released into the environment, the product will rapidly disperse into the atmosphere where it will undergo photochemical degradation.
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propane (74-98-6)

Ecology - soil	If released into the environment, the product will rapidly disperse into the atmosphere where it will undergo photochemical degradation.
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12.5. Results of PBT and vPvB assessment

No additional information available

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12.6. Other adverse effects

No additional information available




SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Prevent entry to sewers and public waters.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1950	1950	1950	Not applicable	Not applicable
14.2. UN proper shipping name				
AEROSOLS	AEROSOLS	Aerosols, flammable	Not applicable	Not applicable
Transport document description				
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1	UN 1950 Aerosols, flammable, 2.1	Not applicable	Not applicable
14.3. Transport hazard class(es)				
2.1	2.1	2.1	Not applicable	Not applicable
			Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No

No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : 5F
Special provisions (ADR) : 190, 327, 344, 625
Limited quantities (ADR) : 1I
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P207, LP02
Special packing provisions (ADR) : PP87, RR6, L2
Mixed packing provisions (ADR) : MP9
Transport category (ADR) : 2
Special provisions for carriage - Packages (ADR) : V14
Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV12
Special provisions for carriage - Operation (ADR) : S2
Tunnel restriction code (ADR) : D

Transport by sea

Special provisions (IMDG) : 63, 190, 277, 327, 344, 959
Limited quantities (IMDG) : SP277
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P207, LP02
Special packing provisions (IMDG) : PP87, L2
EmS-No. (Fire) : F-D
EmS-No. (Spillage) : S-U

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Stowage category (IMDG) : None

Air transport

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Y203
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 203
PCA max net quantity (IATA) : 75kg
CAO packing instructions (IATA) : 203
CAO max net quantity (IATA) : 150kg
Special provisions (IATA) : A145, A167
ERG code (IATA) : 10L

Inland waterway transport

No data available

Rail transport

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

30. Substances which are classified as reproductive toxicant category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 5 or Appendix 6, respectively.	TF Dry
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	TF Dry
29. Substances which are classified as germ cell mutagen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 3 or Appendix 4, respectively.	TF Dry
3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	TF Dry
28. Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.	TF Dry

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

VOC content : 573.7 g/l (85.00%)

Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No

SECTION 16: Other information

Indication of changes:

Section	Changed item	Change	Comments
1.2	Function or use category	Added	
2.2	Precautionary statements (CLP)	Modified	
15.2	Chemical safety assessment	Modified	

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Abbreviations and acronyms:	
	Abbreviations and acronyms: RID: Regulations Concerning the International Transport of Dangerous Goods by Rail ICAO: International Civil Aviation Organization ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonized System of Classification and labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent
Full text of H- and EUH-statements:	
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Gas 1	Flammable gases, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
Press. Gas	Gases under pressure
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product