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

1.1. Product identifier

Blockit Shield Spray

UFI: CU8U-EKUA-C4JS-AAK5

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

Use of the substance/mixture

Products for animals

1.3. Details of the supplier of the safety data sheet

Company name:	Armosa BV	
Street:	Biensma 39	
Place:	9001 XZ Grou	
Telephone:	+45 2175 6735	
E-mail:	info-nl@armosa.eu	
Contact person:	Dirk Jan Boersma	Telephone: +31 566 62 43 62
Internet:	shop.armosa.nl	

1.4. Emergency telephone number:

+31 566 62 43 62 (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Aerosol 1; H222-H229
Skin Irrit. 2; H315
Eye Irrit. 2; H319
Skin Sens. 1; H317
STOT SE 3; H336
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

propan-2-ol; isopropyl alcohol; isopropanol
Melaleuca alternifolia, ext.

Signal word: Danger

Pictograms:

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

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	Do not pierce or burn, even after use.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
115-10-6	dimethyl ether			75 - < 80 %
	204-065-8	603-019-00-8		
	Flam. Gas 1, Compressed gas; H220 H280			
1314-13-2	Zinc oxide			5 - < 10 %
	215-222-5	030-013-00-7	01-2119463881-32	
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol			5 - < 10 %
	200-661-7	603-117-00-0	01-2119457558-25	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336			
85085-48-9	Melaleuca alternifolia, ext.			5 - < 10 %
	285-377-1			
	Flam. Liq. 3, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Asp. Tox. 1, Aquatic Chronic 2; H226 H332 H302 H315 H319 H317 H304 H411			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
1314-13-2	215-222-5	Zinc oxide	5 - < 10 %
	inhalation: LC50 = > 5,7 mg/l (dusts or mists); oral: LD50 = > 5000 mg/kg Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1		
67-63-0	200-661-7	propan-2-ol; isopropyl alcohol; isopropanol	5 - < 10 %
	inhalation: LC50 = 25 mg/l (vapours); dermal: LD50 = 13900 mg/kg; oral: LD50 = 5840 mg/kg		
85085-48-9	285-377-1	Melaleuca alternifolia, ext.	5 - < 10 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. If experiencing respiratory symptoms: Call a doctor.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

After ingestion

Observe risk of aspiration if vomiting occurs. If swallowed, rinse mouth with water (only if the person is conscious). Immediately call a doctor.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet, Carbon dioxide (CO2), alcohol resistant foam., Extinguishing powder.
Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Extremely flammable aerosol. Pressurized container: May burst if heated. Vapours can form explosive mixtures with air.
In case of fire may be liberated: Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Full protective suit.
Fight fire remotely due to the risk of explosion.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Evacuate area.

For non-emergency personnel

Remove all sources of ignition. Provide adequate ventilation. Use personal protection equipment.

For emergency responders

Wear personal protection equipment (refer to section 8).

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment

Stop leak if safe to do so.

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.
Ventilate affected area.

Other information

Use only antistatically equipped (spark-free) tools.
Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Advice on protection against fire and explosion

Do not spray on naked flames or any incandescent material. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

Further information on handling

Do not pierce or burn, even after use.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances

Further information on storage conditions

Keep away from heat. Protect from sunlight.

7.3. Specific end use(s)

Products for animals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
115-10-6	Dimethyl ether	1000	1920		TWA (8 h)	
67-63-0	Isopropyl alcohol	200	-		TWA (8 h)	
		400	-		STEL (15 min)	
67-63-0	Propan-2-ol	200	-		TWA (8 h)	
		400	-		STEL (15 min)	
1314-13-2	Zinc oxide, fume (Respirable Fraction)	-	2		TWA (8 h)	

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
		-	10		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
67-63-0	2-Propanol	Acetone	40 mg/L	Urine	End of shift at end of workweek

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol			
Worker DNEL, long-term		inhalation	systemic	500 mg/m³
Worker DNEL, long-term		dermal	systemic	888 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	89 mg/m³
Consumer DNEL, long-term		dermal	systemic	319 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	26 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	51 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	1000 mg/m³

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use eye protection according to EN 166.

Hand protection

Wear suitable gloves tested to EN374.

Suitable material: NBR (Nitrile rubber)
Thickness of the glove material: >= 0,7 mm
Permeation time (maximum wear duration): > 120 min.

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Respiratory protection necessary at: exceeding exposure limit values.
Filter type: ABEK-P2

Thermal hazards

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Environmental exposure controls

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid (Aerosol)
Colour:	greenish blue
Odour:	characteristic
Odour threshold:	not determined
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	(dimethyl ether) - 24,9 °C
Flammability:	Extremely flammable aerosol.
Lower explosion limits:	(dimethyl ether) 3 vol. %
Upper explosion limits:	(dimethyl ether) 18,6 vol. %
Flash point:	(Solvents) 13 °C
Auto-ignition temperature:	(Solvents) 425 °C
Decomposition temperature:	not determined
pH-Value:	not determined
Viscosity / kinematic:	not determined
Water solubility:	partially miscible

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:	not determined
Vapour pressure (at 20 °C):	4000-5000 hPa
Density (at 20 °C):	0,75 g/cm³
Relative vapour density:	not determined
Particle characteristics:	not determined

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Heating may cause an explosion. Vapours can form explosive mixtures with air.

Further Information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol. Pressurized container: May burst if heated.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Vapours can form explosive mixtures with air.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. heat. UV-radiation/sunlight.

10.5. Incompatible materials

Oxidizing agent. Pyrophoric or self-heating substances

10.6. Hazardous decomposition products

In case of fire may be liberated: Pyrolysis products, toxic.

SECTION 11: Toxicological information

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

Acute toxicity

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1314-13-2	Zinc oxide				
	oral	LD50 > 5000 mg/kg	Rat	ECHA	
	inhalation (4 h) dust/mist	LC50 > 5,7 mg/l	Rat	ECHA	
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol				
	oral	LD50 5840 mg/kg	Rat	ECHA	
	dermal	LD50 13900 mg/kg	Rabbit	ECHA	
	inhalation (4 h) vapour	LC50 25 mg/l	Rat	ECHA	
85085-48-9	Melaleuca alternifolia, ext.				
	oral	ATE 500 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/eye irritation: Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Melaleuca alternifolia, ext.)

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause drowsiness or dizziness. (propan-2-ol; isopropyl alcohol; isopropanol)

STOT-repeated exposure

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

Aspiration hazard

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

Information on likely routes of exposure

Eye contact, Skin contact, Inhalation.
Active agent: oral

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic life with long lasting effects.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h][d]	Species	Source	Method
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol					
	Acute fish toxicity	LC50 9640 mg/l	96 h	Piscis	ECHA	

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol	0,05

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

List of Wastes Code - used product

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150104 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); metallic packaging

Contaminated packaging

Do not pierce or burn, even after use. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 1950

14.2. UN proper shipping name: AEROSOLS

14.3. Transport hazard class(es): 2

14.4. Packing group: -

Hazard label: 2.1

Classification code: 5F

Special Provisions: 190 327 344 625

Limited quantity: 1 L

Excepted quantity: E0

Transport category: 2

Tunnel restriction code: D

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1950

14.2. UN proper shipping name: AEROSOLS

14.3. Transport hazard class(es): 2

14.4. Packing group: -

Hazard label: 2.1

Classification code: 5F

Special Provisions: 190 327 344 625

Limited quantity: 1 L

Excepted quantity: E0

Marine transport (IMDG)

14.1. UN number or ID number: UN 1950

14.2. UN proper shipping name: AEROSOLS

14.3. Transport hazard class(es): 2.1

14.4. Packing group: -

Hazard label: 2.1

Special Provisions: 63, 190, 277, 327, 344, 381, 959

Limited quantity: 1000 mL

Excepted quantity: E0

EmS: F-D, S-U

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1950

14.2. UN proper shipping name: AEROSOLS, FLAMMABLE

14.3. Transport hazard class(es): 2.1

14.4. Packing group: -

Hazard label: 2.1

Special Provisions: A145 A167 A802

Limited quantity Passenger:	30 kg G
Passenger LQ:	Y203
Excepted quantity:	E0
IATA-packing instructions - Passenger:	203
IATA-max. quantity - Passenger:	75 kg
IATA-packing instructions - Cargo:	203
IATA-max. quantity - Cargo:	150 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes

Danger releasing substance: Zinc oxide, Melaleuca alternifolia, ext.

14.6. Special precautions for user

Warning: Extremely flammable aerosol.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

Directive 2010/75/EU on industrial emissions:	< 95 %
Information according to Directive 2012/18/EU (SEVESO III):	P3a FLAMMABLE AEROSOLS
Additional information:	E2

Additional information

Aerosol Directive (75/324/EEC).

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D):	2 - obviously hazardous to water

Additional information

Observe in addition any national regulations!

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

Flam. Gas: Flammable gases
Aerosol: Aerosol
Compressed gas
Flam. Liq: Flammable liquid
Acute Tox: Acute toxicity
Asp. Tox: Aspiration hazard
Skin Irrit: Skin irritation
Eye Irrit: Eye irritation
Skin Sens: Skin sensitisation
STOT SE: Specific target organ toxicity - single exposure
Aquatic Acute: Acute aquatic hazard

Aquatic Chronic: Chronic aquatic hazard

CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging
EU: European Union
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
REACh: Registration, Evaluation and Authorization of Chemicals
UN: United Nations
PBT: Persistent, Bioaccumulative, Toxic
SVHC: Substance of Very High Concern
vPvB: very Persistent, very Bioaccumulative
ATE: Acute Toxicity Estimates
BCF: Bio-Concentration Factor
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration
VOC: Volatile Organic Compounds
DIN: Deutsches Institut für Normung e.V. (German Institute for Standardization)
EN: European Standard
ISO: International Organization for Standardization
IUCLID: International Uniform ChemicaL Information Database
LC50: Lethal Concentration, 50 %
LD50: Lethal Dose, 50 %
LL50: Lethal Loading, 50 %
OECD: Organisation for Economic Co-operation and Development
EC50: Effective Concentration 50 %
M-Faktor: Multiplication Factor
EL50: Effect Loading, 50 %
ErC50: Effective Concentration 50 %, growth rate
M-Faktor: Multiplication Factor
NOEC: No Observed Effect Concentration
ADN: Accord européen relatif au transport international des marchandises Dangereuses par voies de Navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
DGR: Dangerous Goods Regulations
EmS: Emergency Schedules
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organization
IE: Industrial Emissions
IMDG: International Maritime Code for Dangerous Goods
LQ: Limited Quantity
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
MFAG: Medical First Aid Guide
RID: Regulations concerning the International carriage of Dangerous goods by rail
TI: Technical Instructions

Key literature references and sources for data

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations). (v.1.2, 2013)

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Aerosol 1; H222-H229	On basis of test data
Skin Irrit. 2; H315	Bridging principle "Aerosols"
Eye Irrit. 2; H319	Bridging principle "Aerosols"
Skin Sens. 1; H317	Bridging principle "Aerosols"
STOT SE 3; H336	Bridging principle "Aerosols"
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)