SAFETY DATA SHEET

Safety data sheet according to (EC) No. 1907/2006

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

1.1. Product identifier:
Formula 11
1.2. Relevant identified uses of the substance or mixture and uses advised against:
Card or liquid to clean magnetic and chip card reader heads.
1.3. Details of the supplier of the safety data sheet:
AM Denmark A/S
Flæsketorvet 60 Phone: +45 40560963
DK-1711 København V
Responsible person for the safety data sheet (e-mail): hello@am-denmark.com
1.4. Emergency telephone number:
+45 82 12 12 12 (Poison Line (Denmark) – 24-hour service)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:
CLP (1272/2008): None.
2.2. Label elements:
None.
2.3. Other hazards:
PBT/vPvB: No ingredients are PBT/vPvB, according to the criteria in REACH Annex XIII.
Endocrine disrupting properties: The substances are not identified as having endocrine disrupting properties in accordance with the criteria set out in Regulation 2017/2100 or Regulation 2018/605.

SECTION 3: Composition/information on ingredients

3.2. Mixtures:

% w/w	Name	CAS	EC-No.	Index-No.	REACH reg. No.	Classification	Note
0.1-<1	Ethanol	64-17-5	200-578-6	603-002-00-5	01-2119457610-43	Flam. Liq. 2;H225 Eye Irrit. 2;H319	1
0.1-<1	2-Butoxyethanol	111-76-2	203-905-0	603-014-00-0	01-2119475108-36	Acute Tox. 4;H302+H312+H332 Eye Irrit. 2;H319 Skin Irrit. 2;H315	2
0.1-<1	2-(2-Butoxy-ethoxy)ethanol	112-34-5	203-961-6	603-096-00-8	01-2119475104-44	Eye Irrit. 2;H319	-

1) SCL (Specific Concentration limits) for classification (ECHA): Eye Irrit. 2;H319: C $\geq$ 50%
2) ATE (oral) = 1300 mg/kg; ATE (inhalation, vapours) = 11 mg/l/4h; ATE (dermal) = 400 mg/kg

Wording of hazard statements – see section 16.

SECTION 4: First-aid measures

4.1. Description of first aid measures:
Inhalation: Move the affected person to fresh air. Keep at rest. In case of discomfort: Get medical attention.
Skin contact: Remove contaminated clothing. Flush and wash skin with water and mild soap. If irritation persists: Seek medical advice.
Eye contact: Flush with water or physiological salt water for 5 min. If irritation persists: Seek medical advice.
Ingestion: Rinse mouth and drink plenty of water. In case of discomfort: Get medical attention.
4.2. Most important symptoms and effects, both acute and delayed:
May cause slight eye irritation.
4.3. Indication of any immediate medical attention and special treatment needed:
Show this safety data sheet to a physician or emergency ward.

SECTION 5: Firefighting measures

5.1. Extinguishing media:
Not flammable.
5.2. Special hazards arising from the substance or mixture:
Not relevant (the mixture is not combustible).
5.3. Advice for firefighters:
When extinguishing surrounding fires use breathing apparatus with an independent source of air.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:
Use gloves of rubber when spill is wiped up – see section 8. Ventilate area of spill.
6.2. Environmental precautions:
Do not empty into drains – see section 12.
6.3. Methods and material for containment and cleaning up:
Wipe up spillage, etc. with paper towels. Further handling of spillage - see section 13.
6.4. Reference to other sections:
See references above.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:
Provide sufficient ventilation. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Change contaminated clothing. Wash hands and contaminated areas with water and mild soap after use. Skin lotion may be used after work to avoid dryness of skin.
7.2. Conditions for safe storage, including any incompatibilities:
Store in a well-ventilated place. Keep out of the reach of children. Keep out of direct sunlight.
7.3. Specific end use(s):
See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters:
Occupational exposure limits (EH40/ed.2020):

	8-hour TWA	**15-min STEL**	**Comments**
Ethanol	1000 ppm = 1920 mg/m^3	-	-
2-Butoxyethanol	25 ppm = 123 mg/m^3	50 ppm = 246 mg/m^3	Sk, BMGV
2-(2-Butoxyethoxy) ethanol	10 ppm = 67.5 mg/m^3	15 ppm = 101.2 mg/m^3	-

Sk: Can be absorbed through the skin.
BMGV: Biological monitoring guidance values

BMGV:
2-Butoxyethanol: 240 mmol butoxyacetic acid/mol creatinine in urine (post shift)

DNEL/PNEC: No CSR.
8.2. Exposure controls:
Appropriate engineering controls: None particular.
Personal protective equipment:
Inhalation: Respiratory equipment is normally not required by sufficient ventilation or short-term use.
Skin: By prolonged contact or repeated use: Wear protective gloves of e.g. nitrile or butyl rubber (EN374).
Break-through time: App. 3 hours.
Eyes: Normally not necessary.
Environmental exposure controls: None particular.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Physical state:	Solid inert material impregnated with liquid/solvent
Colour:	Colourless
Odour:	Characteristic
Melting point/freezing point (°C):	Not determined
Boiling point or initial boiling point and boiling range (°C):	Not determined
Flammability (solid, gas):	Not relevant
Lower and upper explosion limit (vol-%):	Not determined
Flash point (°C):	> 61
Auto-ignition temperature (°C):	Not relevant
Decomposition temperature (°C):	Not determined
pH:	Not determined
Kinematic viscosity:	Not determined
Solubility:	Completely soluble in water
Partition coefficient n-octanol/water (log value):	Not determined
Vapour pressure:	Not determined
Density and/or relative density:	Not determined
Relative vapour density:	Not determined
Particle characteristics:	Not determined
9.2. Other information:	None

SECTION 10: Stability and reactivity

10.1. Reactivity:
No available data.
10.2. Chemical stability:
Stable under normal conditions (see section 7).
10.3. Possibility of hazardous reactions:
None known.
10.4. Conditions to avoid:
Formation of sparks and glows. Excessive heating and sources of ignition.
10.5. Incompatible materials:
May react with strong oxidising agents.
10.6. Hazardous decomposition products:
When heated to high temperatures (decomposition) it emits toxic fumes such as carbon oxides.

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.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/irritation: Based on available data, the classification criteria are not met.
Respiratory or skin sensitization: Based on available data, the classification criteria are not met.
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: Based on available data, the classification criteria are not met.
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.

SECTION 11: Toxicological information (continued)

Hazard class	Data	Test	Data source
Acute toxicity:			
Inhalation	LC_{50} (rat) = 117-125 mg/l/4H (Ethanol)	OECD 403	ECHA
	LC_{50} (rat, vapours) = 2.21 mg/l/4h (2-Butoxyethanol)	No info	IUCLID
	LC_{50} (rat) > 29 ppm/2h (2-(2-Butoxyethoxy)ethanol)	OECD 403	Supplier
Dermal	LD_{Lo} (rabbit) = 20000 mg/kg (Ethanol)	No info	IUCLID
	LD_{50} (rabbit): 400-500 mg/kg (2-Butoxyethanol)	No info	IUCLID
	LD_{50} (rabbit) = 2764 mg/kg (2-(2-Butoxyethoxy)ethanol)	OECD 402	Supplier
Oral	LD_{50} (rat) = 1780 mg/kg (Ethanol)	No info	IUCLID
	LD_{50} (rat) = 470 mg/kg (2-Butoxyethanol)	No info	IUCLID
	LD_{50} (rat) = 7291 mg/kg (2-(2-Butoxyethoxy)ethanol)	No info	Supplier
Corrosion/irritation:	Moderate eye irritation, no skin irritation, rabbit (Ethanol)	OECD 404, 405	ECHA
	Skin irritation, guinea pig (2-Butoxyethanol)	No info	IUCLID
	Eye irritation, no skin irritation (2-(2-Butoxyethoxy)ethanol)	OECD 404, 405	Supplier
Sensitization:	No skin sensitization, guinea pig (Ethanol)	GPMT, etc.	IUCLID
	No skin sensitization, guinea pig (2-Butoxyethanol)	GPMT	IUCLID
	No skin sensitization, guinea pig (2-(2-Butoxyethoxy)ethanol)	OECD 406	Supplier
CMR:	Data on mutagenicity is inconclusive (Ethanol)	Miscellaneous	IUCLID
	No mutagen effects, in vitro (2-Butoxyethanol)	Ames	IUCLID
	No CMR-effects (2-(2-Butoxyethoxy)ethanol)	Miscellaneous	Supplier

Information on likely routes of exposure: Skin, lungs and gastrointestinal tract.

Symptoms:

Inhalation: Inhalation of particles and vapours may cause irritation of the respiratory tract.

Skin: May cause irritation with redness. Degreases skin. 2-Butoxyethanol can be absorbed through the skin.

Eyes: May cause irritation with redness and pain.

Ingestion: May cause irritation of the gastrointestinal tract with nausea.

Chronic effects: Prolonged or frequent exposure to vapours of volatile organic compounds may result in damage on liver, kidneys, blood or central nervous system.

11.2. Information on other hazards: None known.

SECTION 12: Ecological information

12.1. Toxicity:

Aquatic	Data	Test (Media)	Reference
Fish	LC_{50} (Pimephales promelas, 96h) = 15300 mg/l (Ethanol)	No info (FW)	IUCLID
	LC_{50} (Oncorhynchus mykiss, 96h) = 1464 mg/l (2-Butoxyethanol)	OECD 203	Supplier
	LC_{50} (Lepomis macrochirus,96h) = 1300 mg/l (2-(2-butoxyethoxy)ethanol)	OECD 203	Supplier
Crustacean	EC_{50} (Daphnia magna, 48h) = 9268-14221 mg/l (Ethanol)	No info (FW)	IUCLID
	EC_{50} (Daphnia magna, 48h) = 1550 mg/l (2-Butoxyethanol)	OECD 202	Supplier
	EC_{50} (Daphnia magna, 24h) = 2850 mg/l (2-(2-butoxyethoxy)ethanol)	No info (FW)	Supplier
Algae	EbC_{50} (Pseudokirchneriella subcapitata, 72h)= 911 mg/l (2-Butoxyethanol)	OECD 201	Supplier
	EC_{50} (Pseudokirchneriella subcapitata, 72h) = 1101 mg/l (2-(2-Butoxyethoxy)-ethanol)	No info (FW)	Supplier

12.2. Persistence and degradability:

Ethanol is readily biodegradable (OECD 301 D).

2-Butoxyethanol is degraded 90.4% in 28 days at OECD 301B-test and is considered readily biodegradable.

2-(2-Butoxyethoxy)ethanol is considered readily biodegradable.

12.3. Bioaccumulative potential:

Ethanol: Log K_{ow} < 1 (no significant bioaccumulation is expected).

2-Butoxyethanol: Log K_{ow} = 0,81 (no significant bioaccumulation is expected).

The bioconcentration factor (BCF) for 2-butoxyethanol is estimated at 3.2 in fish, the substance is therefore not considered to be bioaccumulative.

2-(2-Butoxyethoxy)ethanol: Log K_{ow} < 1 (no significant bioaccumulation is expected).

12.4. Mobility in soil:

Ethanol: K_{oc} < 10 (very large mobility expected in soil).

SECTION 12: Ecological information (continued)

12.5. Results of PBT and vPvB assessment:
The ingredients are not considered PBT/vPvB according to criteria in Annex XIII.
12.6. Endocrine disrupting properties:
None known.
12.7. Other adverse effects:
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods:
The mixture is to be considered as non-hazardous waste. Disposal should be according to local, state or national legislation. Dispose of through authority facilities or pass to chemical disposal company.
EWC-code:
20 01 30 (mixture itself) and 15 02 03 (Paper towel, inert material etc. contaminated with the mixture)

SECTION 14: Transport information

Not dangerous goods according to ADR/RID/IMDG/IATA.
14.1. UN number or ID number: None.
14.2. UN proper shipping name: None.
14.3. Transport hazard class(es): None.
14.4. Packing group: None.
14.5. Environmental hazards: No.
14.6. Special precautions for user: None.
14.7. Maritime transport in bulk according to IMO instruments: Not relevant.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:
Must not be used by persons under 18 years of age.
15.2. Chemical safety assessment:
No CSR.

SECTION 16: Other information

Hazard statements mentioned in section 3:

H225:	Highly flammable liquid and vapour.
H302+H312+H332:	Harmful if swallowed, in contact with skin or if inhaled.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation.

Abbreviations:
CMR = Carcinogenicity, mutagenicity and reproductive toxicity.
CSR = Chemical Safety Report
DNEL = Derived No-Effect Level
EC_{50} = Effect Concentration 50 %
ECB = European Chemicals Bureau.
ECHA = European Chemicals Agency
FW = Fresh Water
LC_{50} = Lethal Concentration 50 %
LD_{50} = Lethal Dose 50 %
PBT = Persistent, Bioaccumulative, Toxic
PNEC = Predicted No-Effect Concentration
vPvB = very Persistent, very Bioaccumulative
Literature:
ECHA = REACH Registration dossier from ECHA's homepage
IUCLID = International Uniform ChemicaL Database Information

SECTION 16: Other information (continued)

Training advice:
No special training is required. However, the user should be well instructed in the execution of the task, be familiar with this Safety Data Sheet and have normal training in the use of personal protective equipment.
Changes since the previous edition:
Revision of the format according to Regulation 2020/878.

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