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SAFETY DATA SHEET

Safety data sheet according to (EF) no. 1907/2006.

POINT 1: Identification of material/compounds and of the company/factory

1.1. Product identifier:

Dan-Liq Swine
UFI: 7020-2048-Q00U-20CC

1.2. Relevant identifying use of the material or compound and the usage that is contraindicated:

Liquid supplementary feed. Only for commercial use.

1.3. Detailed information about the supplier for the safety data sheet:

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Teglvaerksvej 11
4733 Tappernoeje
Denmark
Tel.: +45 56214070

Responsible for safety data sheet (e-mail): jorenku@jorenku.dk

1.4. Emergency phone:

Contact the poison centre in your own country.

POINT 2: Identification of danger

2.1. Classification of the material or compound:

Corrosive and environmentally dangerous liquid.
CLP (1272/2008): Met. Corr. 1;H290 Skin Corr. 1B;H314 Eye Dam. 1;H318 Aquatic Acute 1;H400 Aquatic Chronic 2;H411

2.2. Label elements:


DANGER

Contains:	Phosphoric acid
H290:	May be corrosive to metals.
H314:	Causes severe skin burns and eye damage.
H410:	Very toxic to aquatic life with long lasting effects.
P273:	Avoid release to the environment.
P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353:	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338+P310:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P301+P330+P331:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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P391: Collect spillage.
EUH 208: Contains sodium selenite. May produce an allergic reaction.

2.3. Other dangers:
PBT/vPvB: The ingredients are not PBT/vPvB according to the criteria in REACH annex XIII.
Endocrine disrupting properties: The ingredients are not considered endocrine disruptors according to the criteria of Regulation 2017/2100 or Regulation 2018/605.

POINT 3: Compensation of/information about contents

3.1. Compensation of/information about contents

3.2. Compounds:

Substance name	CAS	EF-No.	Index-no.	REACH reg.no.	Substance Classification	Note
Phosphoric acid	7664-38-2	231-633-2	015-011-01-6	01-2119485924-24	Skin Corr. 1B;H314 Eye Dam. 1;H318 Met. Corr. 1;H290 Acute Tox. 4;H302	1,2
Manganous sulphate	7785-87-7	232-089-9	025-003-00-4	-	STOT RE 2;H373 Aquatic Chronic 2; H411	-
Zinc oxide	1314-13-2	215-222-5	030-013-00-7	01-2119463881-32	Aquatic Acute 1;H400 (M=1) Aquatic Chronic 1; H410 (M=1)	1
Copper sulphate	7758-99-8	231-847-6	029-023-00-4	01-2119520566-40	Acute Tox. 4;H302 Eye Dam. 1;H318 Aquatic Acute 1;H400 (M=10)	1,3
Sodium selenite	10102-18-8	233-267-9	034-003-00-3	01-2119985427-23	Acute Tox. 2;H300 Acute Tox. 3;H331 Skin Sens. 1;H317 Aquatic Chronic 2;H411	1,4

1) The substance has a limit value.
2) SCL (Specific Concentration limits) for classification: Skin Corr. 1B;H314: C ≥ 25%;
Skin Irrit. 2;H315/Eye Irrit. 2;H319: 10 % ≤ C < 25 % (EU harmonised).
ATE (oral) = 658 mg/kg
3) ATE (oral) = 482 mg/kg
4) ATE (oral) = 7 mg/kg; ATE (inhalation) = 0.052 mg/l (dust)

The wording of the hazard statements - see paragraph 16.

POINT 4: First aid measures

4.1. Description of first aid measures:

Inhalation: Bring the person to fresh air. Keep calm under supervision. In case of discomfort: See a doctor.

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Skin: Immediately remove contaminated clothing. Rinse skin and wash thoroughly with soap and water. Seek medical attention. Continue rinsing until a doctor can take over the treatment.

Eyes: Immediately rinse with water or physiological saline for at least 30 minutes. If possibly remove contact lenses and open the eye wide. In all cases, seek medical attention. Continue rinsing during transport to doctor/hospital.

Ingestion: Immediately rinse mouth thoroughly. **Do not induce vomiting**, because it increases the risk of getting the product into the lungs. If vomiting occurs, keep the head low to avoid stomach contents in the lungs. Immediately call an ambulance.

4.2. Most important symptoms and effects, both acute and delayed:
Corrosion of skin, eyes, mucous membranes and gastrointestinal tract. Skin corrosion causes redness, pain and wounds. The wounds heal with difficulty. Eye corrosion causes redness, severe pain and blurred vision. May cause permanent damage to the vision. Inhalation can cause cough, discomfort and shortness of breath, which can occur several hours after exposure.

4.3. Indication of whether emergency medical attention and special treatment are needed:
Show this safety data sheet to doctors or casualty ward.

POINT 5: Fire suppression

5.1. Suppression methods:
Cannot burn.

5.2. Special dangers in connection with the material or compound:
Avoid inhalation of flue gases. In case of fire, very toxic gases are formed: Primarily phosphorus oxides.

5.3. Indication for a fire department:
Use compressed air mask for heavy smoke.

POINT 6: Accidental release measures

6.1. Personal precautions, personal protective equipment, and emergency procedures:
Use personal protective equipment - see point 8. Limit spread. Ensure good ventilation.

6.2. Environmental protection indications:
Avoid discharge to drains - see point 12. Inform local environmental authorities in case of spillage to the environment.

6.3. Methods and equipment for containment and cleaning:
Smaller amounts are soaked up with paper or the like. Larger amounts are soaked up with granulate and collect in a plastic bucket with a close-fitting lid. Remember gloves! Rinse thoroughly with water. Further waste handling - see point 13.

6.4. References to other points:
See above.

POINT 7: Handling and storage

7.1. Measures for safe handling:
AVOID ALL CONTACT! Avoid aerosol formation and dash. Immediately change contaminated clothing. If skin becomes contaminated, wash immediately. After use, wash with plenty of soap and water. There must be access to water and eyewash bottles. When diluted with water, the acid is poured into the water - never the other way around

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7.2. Conditions for safe storage, including any incompatibility:
In a well close original container in a cool and well-ventilated place. Do not use metal containers. Safe, inaccessible to unauthorized persons, separated from food, medicines and the like.

7.3. Special usage:
See use - point 1.

PUNKT 8: Exposure control/personal protective equipment

8.1. Control parameter:
AT-limit value (reg. 1054 ff 28.06.2022):

	8-hours limit value	**Short-term limit value**	**Anm.**
Phosphoric acid	1 mg/m^3	2 mg/m^3	E
Copper, powder and dust	1 mg/m^3	2 mg/m^3	-
Zinc oxide and zinc oxide smoke, calculated as Zn	4 mg/m^3	8 mg/m^3	-
Manganese, powder, dust and inorganic compounds, inhalable, calculated as Mn	0.2 mg/m^3	0.4 mg/m^3	E
Manganese, powder, dust and inorganic compounds, breathable, calculated as Mn	0.05 mg/m^3	0.1 mg/m^3	E
Selenium and compounds, calculated as Se	0.1 mg/m^3	0.2 mg/m^3	-

E = The substance has an EF-limit value

DNEL:	**Exposure**	**Value**	**Population**	**Effects**
Phosphoric acid	Long-term - inhalation	10.7 mg/m^3	Workers	Systemic
	Long-term - inhalation	1 mg/m^3	Workers	Local
	Acute - inhalation	2 mg/m^3	Workers	Local
	Long-term - inhalation	4.57 mg/m^3	Consumers	Systemic
	Long-term - inhalation	0.36 mg/m^3	Consumers	Local
	Long-term - inhalation	0.1 mg/kg/d	Consumers	Systemic
Zinc oxide	Long-term, inhalation	5 mg/m^3	Workers	Systemic
	Long-term, skin	83 mg/kg/d	Workers	Systemic
	Long-term, inhalation	0.83 mg/kg/d	Consumers	Systemic
	Long-term, skin	83 mg/kg/d	Consumers	Systemic
	Long-term, inhalation	2.5 mg/m^3	Consumers	Systemic
Sodium selenite	Long-term - inhalation	0.11 mg/m3	Workers	Systemic
	Long-term - skin	15.33 mg/kg/d	Workers	Systemic
	Long-term - inhalation	0.033 mg/m3	Consumers	Systemic
	Long-term - skin	9.42 mg/kg/d	Consumers	Systemic
	Long-term - inhalation	9.42 µg/kg/d	Consumers	Systemic

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PNEC:	Medium	Value
Zinc oxide	Fresh water Sea water Fresh water sediment Sea water sediment Sewage works (STP) Soil	0.0206 mg/l 0.0061 mg/l 117.8 mg/kg 56.5 mg/kg 52 µg/l 35.6 mg/kg
Copper sulphate	Fresh water Sea water Soil	7.8 µg/l 5.2 µg/l 65 mg/kg
Sodium selenite	Fresh water Sea water Fresh water sediment Sea water sediment Sewage works (STP) Sporadic discharge Soil	5.85 µg/l 4.38 µg/l 18 mg/kg 13.6 mg/kg 3285 µg/l 12 µg/l 0.22 mg/kg

8.2. Exposure control:

Appropriate measures for exposure control: Provide effective ventilation.

Personal protective equipment:

Inhalation: In case of insufficient ventilation or aerosol formation: use approved mask (EN140) with combination filter type E/P2 (yellow - against acid gases). The filters have a limited service life (must be replaced). Read the manufacturer's instructions.

Skin: Wear protective gloves (EN374) made of neoprene or nitrile rubber. Breakthrough time 4 hours.

Eyes: Tightly fitted safety goggles (EN 166) or face shield by risk of dash.

Measures to limit exposure to the environment: See points 6 and 13.

POINT 9: Physical and chemical characteristics

9.1. Information about basic physical and chemical characteristics:

Appearance:	Liquid
Colour:	Uncoloured
Odor:	Characteristically
Melting point/freezing point (°C):	Not decided
Boiling point or bubble-point and boiling point interval (°C):	Not decided
Ignitability (solid, gaseous):	Not decided
Upper/lower explosion limits (vol-%):	Not decided
Flash point (°C):	> 100
Auto-ignition temperature (°C):	Not decided
Self-accelerating decomposition temperature (°C):	Not relevant
pH:	< 2
Kinematic viscosity (mm^2/s at 40°C):	Not decided
Solubility (mg/l):	Soluble in water
Partition coefficient n-octanol/water Log K_{ow}:	Not relevant – solution
Vapor pressure (hPa, 20°C):	Not decided

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Density and/or relative density (g/cm^3):	> 1
Relative vapor density (air=1):	Not decided
Particulate properties:	Not decided for liquids

9.2. Other information: None known.

POINT 10: Stability and reactivity

10.1. Reactivity:
No available data.

10.2. Chemical stability:
Stable under recommended storage conditions - see point 7.

10.3. Risk of dangerous reactions:
None known.

10.4. Conditions that should be avoided:
Avoid frost and strong heating.

10.5. Materials that should be avoided:
Avoid contact with materials containing hypochlorite.
Phosphoric acid reacts with most metals (e.g. aluminum, tin, and zinc) and develops hydrogen gas, which can form explosive mixtures with air. Reacts heavly with strong bases.

10.6. Dangerous decomposition products:
When heated to very high temperatures, corrosive phosphorus oxides can be released.

POINT 11: Toxicological information

11.1. Information about 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: Skin Corr. 1B; H314 Causes severe skin burns and eye damage.
Serious eye damage/eye irritation: Eye Dam. 1; H318 Causes serious eye damage.
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.
Reproduction toxicity: Based on available data, the classification criteria are not met.
Single STOT-exposure: Based on available data, the classification criteria are not met.
Repeated STOT-exposures: Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.

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Danger class	Data	Test	Data source
Acute toxicity:			
Inhalation	LC_{50} (rat) = 25.5 mg/m^3 (corrosion) (Phosphoric acid)	Not informed	RTECS
	LC_{50} (rat) > 5.7 mg/l/4h (Zinc oxide)	OECD 403	Supplier
	LC_{50} (rat): > 0,052 og ≤ 0,51 mg/l (Sodium selenite)	OECD 403	ECHA
Dermal	LD_{50} (rabbit) = 2740 mg/kg (Phosphoric acid)	Not informed	IUCLID
	LD_{50} (rat) > 2000 mg/kg (Zinc oxide)	OECD 402	Supplier
	LD_{50} (rabbit) > 1000 mg/kg (Copper sulphate)	Not informed	IUCLID
Oral	LD_{50} (rat) = 2600 mg/kg (corrosion) (Phosphoric acid)	OECD 423	IUCLID
	LD_{50} (rat) > 5000 mg/kg (Zinc oxide)	OECD 401	ECHA
	LD_{50} (rat) = 482 mg/kg (Copper sulphate)	Not informed	Supplier
	LD_{50} (rat) = 7 mg/kg (Sodium selenite)	OECD 401	ECHA
Corrosivity/ irritation:	Severe corrosive on skin and eyes, rabbit (Phosphoric acid)	OECD 404, 405	IUCLID
	Ingen hud- og øjenirritation (Zinc oxide)	OECD 404, 405	ECHA
	Eye irritation, rabbit (Copper sulphate)	OECD 405	ECHA
	No skin irritation, rabbit (Copper sulphate)	OECD 404	ECHA
	No skin or eye irritation (Sodium selenite)	OECD 431/305	ECHA
Sensitisation:	No skin sensitizing, guinea pig (Copper sulphate)	OECD 406	ECHA
	No skin sensitizing (Sodium selenite)	Not informed	ECHA
CMR:	No mutagenic or reproductive toxic effects (Phosphoric acid)	OECD 471	ECHA
	No CMR-effects (Propionic acid)	Different	ECHA

Usual exposure methods: Lungs, skin, and gastrointestinal tract.

Inhalation: Corrosive to the respiratory tract with sore throat, cough and risk of water in the lungs (pulmonary edema). Be aware that the symptoms (breathlessness) may occur several hours after exposure

Skin: Corrosive with redness, wounds and pain. Also works defatting.

Eyes: Corrosive with redness and pain. Risk of permanent eye damage.

Ingestion: Corrosive effect on the mucous membrane in mouth, throat and gastrointestinal tract with stomach pain, nausea, vomiting, diarrhoea, stomach bleeding, blood pressure drop, cramps, restlessness and salivation.

Chronic effects: Frequent or long-term skin contact can defatten the skin, cause eczema, cracks, redness and itching and trigger an allergic reaction. Pure selenium is an essential trace mineral for humans. The substance is absorbed into the body by repeated exposure. Consumption of 1 mg selenium per day can cause chronic poisoning with hair loss, damage to nails and teeth, nerve disorders, eye inflammation, irregular menstruation among women and a metallic taste in the mouth.

11.2. Information about other hazards: None known.

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POINT 12: Environmental information

12.1. Toxicity:

Aquatic	Data	Test (Media)	Data source
Fish	LC_{50} (Gambusia affinis, 96h) = 138 mg/l (Phosphoric acid)	Not informed	ECHA
	LC_{50} (Oncorhynchus mykiss, 96h) = 0.032 mg/l (Copper sulphate)	Not informed (FW)	EPA Ecotox
	LC_{50} (Lagodon rhomboides, 96h) = 4.4 mg/l (Sodium selenite)	Not informed (FW)	EPA Ecotox
Crustacean	EC_{50} (Daphnia magna, 48h) > 100 mg/l (Phosphoric acid)	OECD 202 (FW)	ECHA
	EC_{50} (Daphnia magna, 48h) = 0.019 mg/l (Copper sulphate)	Not informed (FW)	EPA ecotox
Alga	EC_{50} (Desmodesmus sub. 72h) > 100 mg/l (Phosphoric acid)	OECD 201 (FW)	ECHA
	EC_{50} (Selenastrum capricornutum, 72h) = 0.17 mg/l (Zinc oxide)	OECD 201 (FW)	Supplier
	EC_{50} (Pseudokirchneriella subcapitata, 5d) = 0.003 mg/l (Copper sulphate)	Not informed (FW)	EPA Ecotox
	EC_{50} (Selenastrum acutus, 72h) = 0.08 mg/l (Sodium selenite)	Not informed	EPA Ecotox

12.2. Persistence and degradability:

Phosphoric acid, zinc oxide, copper sulphate, manganese sulphate and sodium selenite are inorganic substances. Methods for determining the biodegradability do not apply to inorganic substances. Dissociates into salts that enter the nature's cycle as fertilizing substance.

12.3. Bioaccumulative potential:

Phosphoric acid: Log K_{ow} < 0 (no significant bioaccumulation).
Zinc oxide: Log K_{ow} = 1.53 (no significant bioaccumulation).
Copper bioaccumulats strongly in invertebrate organisms.

12.4. Mobility in soil:

Copper sulfate is easily soluble in water (forming copper and sulfate ions upon dissolution) and has high mobility in land treatment.

12.5. Results of PBT and vPvB assessment:

The ingredients are not PBT/vPvB according to the criteria in REACH annex XIII.

12.6. Endocrine-disrupting capacities:

None known.

12.7. Other adverse effects:

Emissions of larger amounts can change the pH value in the aquatic environment and shift the balance of the ecosystems.

POINT 13: Removal

13.1. Methods for waste handling:

The chemical must be considered as hazardous waste. Use the local authority's collection scheme.

Chemical waste group:	**EAK-code:**
H	20 01 14
H/Z	15 02 02 (absorbents polluted with the product)

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POINT 14: Transport information

14.1. UN-number or ID-number: 1760
14.2. UN-shipment designation (UN proper shipping name): CORROSIVE LIQUID, N.O.S. (Phosphoric acid)
14.3. Transport danger class(es): 8
14.4. Packaging group: III
14.5. Environmental dangers: Yes.
14.6. Special regulations for the user: None.
14.7. Bulk transport by sea according to IMO instruments: Not relevant.

POINT 15: Information about regulations

15.1. Special determinations/special rules for the material or compound with respect to safety, health and environment:
The product must not be used commercially by young people under 18 years of age(cf. the working environment authority's report on the performance of work).
In a workplace assessment, it must be ensured that employees are not exposed to effects that may involve a risk during pregnancy or breastfeeding (cf. the working environment authority's report on the performance of work).

Feed additives are covered by EU regulation no. 1831/2003 on feed additives.

15.2. Chemical safety evaluation:
No CSR.

POINT 16: Other information

Hazard statements given under point 3:
H290: May be corrosive to metals.
H300: Fatal if swallowed.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H331: Toxic if inhaled.
H373: May cause damage to organs through prolonged or repeated exposure.
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.

Abbreviations:
AT = Working environment authority
CMR = carcinogenic, mutagenic, or toxic to reproduction
CSR = Chemical Safety Report
DNEL = Derived No-Effect Level
EC_{50} = Effect Concentration 50 %
FW = Fresh Water
LC_{50} = Lethal Concentration 50 %
LD_{50} = Lethal dosage 50 %
PBT = Persistent, Bioaccumulative, Toxic
PNEC = Predicted No-Effect Concentration
vPvB = very Persistent, very Bioaccumulative

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Literature:
ECHA = REACH Registration dossier from ECHA's website
EPA Ecotox = US Environmental Protection Agency (database with ecotoxicological data for chemical compounds)
IUCLID = International Uniform ChemicaL Database Information
The supplier's safety data sheet
RTECS = Register of Toxic Effects of Chemical Substances

Advice on training / instruction:
The product may only be used by persons who are carefully instructed in the execution of the work and who have knowledge of the contents of this safety data sheet.

Changes since previous version:
Not relevant - first issue.

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