Product	Farmer's Friend Dairy Hypochlorite 12%
Revision date	1st April 2020
Revision	1

Safety Data Sheet (SDS)

Section 1: Identification of the substance/preparation and of the company/undertaking

1.1 Product identifier

Product name	**Farmer's Friend Dairy Hypochlorite 12%**
Synonyms, Trade names	No information available.

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

Identified uses	Cleaning agent.
Uses advised against	Any other purpose.

1.3 Details of the supplier of the safety data sheet

Supplier	Emerald Clover Ltd. Drumduffy Drumkeeran Co. Leitrim N41 T998 Ireland Tel: 071 96 48008
Contact person	info@emeraldclover.ie

1.4 Emergency telephone number

Emergency telephone	Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9. Tel 01 8092566
National emergency telephone number	Call 999 or 112.

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and chemical hazards	Me. Corr 1 - H290
Human health	Skin Corr. 1B - H314, Eye Dam. 1 - H318, STOT SE 3 - H335
Environment	Aquatic Acute 1 - H400

2.2 Label elements

Contains	SODIUM HYPOCHLORITE 5 - 16%
Detergent labeling	≥5% <15% chlorine-based bleaching agents
Label in accordance with (EC) no. 1272/2008	
Signal word	Danger
Hazard statements	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H400 Very toxic to aquatic life.
Precautionary statements	**Prevention**

P280 Wear protective gloves/ protective clothing/eye protection/face protection.
Response
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.

EUH statements EUH031 Contact with acids liberates toxic gas.

2.3 Other hazards

None known.

Section 3: Composition/identification of ingredients

3.1 Substance

Not applicable.

3.2 Mixtures

Name	Product identifier	Reg. EU 1272/2008	%
SODIUM HYPOCHLORITE 5 - 16%	CAS-No.: 7681-52-9 EC No.: 231-668-3 REACH Reg No.: 01-2119488154-34-0047	Skin Corr. 1B - H314, Eye Dam. 1 - H318, STOT SE 3 - H335, Me. Corr 1 - H290, Aquatic Acute 1 - H400	5-< 16%

The full text for all hazard statements are displayed in section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

Section 4: First aid measures

4.1 Description of first aid measures

General information As a general rule, in case of doubt or if symptoms persist, always call a doctor. Seek medical attention for all burns and eye injuries, regardless how minor they may seem. First aid personnel must be aware of own risk during rescue. Provide general first aid, rest, warmth and fresh air.

Inhalation Move the exposed person to fresh air at once. If breathing is diffiicult, oxygen should be administered by qualified personnel. If not breathing, give artificial respiration. Get prompt medical attention.

Ingestion Get medical attention immediately. Do not induce vomiting. Provided the patient is fully conscious, washout mouth with water. Never give anything by mouth to an unconscious person. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Skin contact SPEED IS ESSENTIAL. Take off contaminated clothing and shoes immediately. Promptly flush contaminated skin with water. Continue to rinse for at least 15 minutes. Seek medical attention immediately.

Eye contact SPEED IS ESSENTIAL. Avoid contaminating unaffected eye. Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open. Remove contact lenses if present and easy to do so. Get medical attention immediately. In the case of diffiiculty of opening the lids, administer an analgesic eye wash (oxybuprocaine).

4.2 Most important symptoms and effects, both acute and delayed

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation Irritating to respiratory system. Symptoms: Breathing diffiiculties, cough, chemical pneumonitis, pulmonary oedema - Repeated or prolonged exposure: Nose bleeds, chronic bronchitis.

Ingestion Severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Risk of shock and respiratory disorder. Symptoms: Nausea, abdominal pain, bloody vomiting, diarrhoea, suffocation, cough, and severe shortness of breath. Risk of

	chemical pneumonitis from product inhalation.
Skin contact	Corrosive! Can cause redness, pain, and severe skin burns. Symptoms: Redness, swelling of tissue, burns, ulceration.
Eye contact	Corrosive! Vapours are irritating and may cause damage to the eyes. May cause irreversible eye damage. May cause blindness. Symptoms: Redness, lachrymation, swelling of tissue, burn.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to the physician	Treat symptomatically.

Section 5: Fire-fighting measures

5.1 Extinguishing media

Extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No unsuitable extinguishing media identified.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	Hazardous decomposition products formed under fire conditions. In case of fire the product releases hydrogen chloride.
Unusual fire & explosion hazards	Irritating or corrosive vapors may be emitted during a fire. Do NOT breathe fumes. Contain run-off. The product is oxidizing when dried.
Specific hazards	Promotes combustion of combustible products or materials.

5.3 Advice for firefighters

Special fire fighting procedures	If possible, fight fire from protected position. Ventilate closed spaces before entering them. Keep up-wind to avoid fumes. Containers close to fire should be removed immediately or cooled with water. Suppress (knock down) gasses/vapours/mists with a water spray.
Protective equipment for firefighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Do not mix with other chemicals. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. In case of inadequate ventilation, use respiratory protection. Eliminate all sources of ignition.
For emergency responders	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Follow safe handling advice and personal protective equipment recommendations for normal use of product. Do not touch spilled material.

6.2 Environmental precautions

Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

6.3 Methods and material for containment and cleaning up

Spill clean up methods	Ventilate and evacuate the area. Eliminate all ignition sources. Wear necessary protective equipment DO NOT touch spilled material! Stop leak if possible without risk. Use non - metallic tools/containers for clean up. Absorb spillage with inert, damp, non-combustible material or use a liquid binding material. Place waste material into suitable labelled sealed containers for disposal. Remove waste promptly to a safe area. Flush with plenty of water to clean spillage area.

6.4 Reference to other sections

Reference to other sections	See section 1 for emergency contact. For personal protection, see section 8. For waste disposal, see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handling

Use personal protective equipment, see Section 8. Avoid contact with skin and eyes. Do not handle broken packages without protective equipment. Ensure adequate ventilation.
Do not use contact lenses. Keep away from flammable materials and incompatible substances. Use only equipment and materials which are compatible with the product. Do not confine the product in a circuit, between closed valves, or in a container without a vent. Always wash hands after handling.

7.2 Conditions for safe storage, including any incompatibilities

Storage precautions

Store in tightly closed original container in a dry, cool and well-ventilated place. Do not confine product in unvented vessels or between closed valves. Keep in a bunded area. Keep away from direct sunlight. Keep away from incompatible materials (see section 10).

Storage class

Corrosive storage

7.3 Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

Usage description

Use only according to directions.

Section 8: Exposure controls/Personal protection

8.1 Control parameters

Ingredient comments

No exposure limits noted for ingredient(s).

8.2 Exposure Controls

Protective equipment

Engineering measures

Provide adequate ventilation, including appropriate local extraction.

Respiratory equipment

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use respirators and components tested and approved under appropriate government standards such as CEN (EU). If the respirator is the sole means of protection, use a full-face supplied air respirator. Self-contained breathing apparatus (EN 133). Respirator with a vapour filter (EN 141). In case of decomposition (see section 10), face mask with combined type B-P2 cartridge.

Hand protection

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374) is recommended. (EU Directive 89/686/EEC). Selection of the glove material depends on consideration of the penetration times, rates of diffusion and degradation, and concentration specific to the workplace. Gloves must be inspected prior to use.
Suggested material: Nitrile. Minimum layer thickness: >= 0.35 mm. Break through time: 480 min. Suggested material: PVC. Minimum layer thickness: 0.5 mm. Break through time: 480 min. Suggested material: Butyl rubber. Minimum layer thickness: 0.5 mm. Break through time: 480 min. Gloves must be inspected prior to use. Consult manufacturer for specific advice on material. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Eye protection

Wear safety goggles or face shield to prevent any possibility of eye contact. Use equipment for eye protection tested and approved under appropriate government standards such as EN 166(EU).

Other protection

Wear appropriate clothing to prevent any possibility of skin contact. The selected clothing must satisfy the European norm standard EN 943. Protective clothing should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands after handling. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

Process conditions	Keep container tightly sealed when not in use. Ensure that eye flushing systems and safety showers are located close by in the work place.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Yellow-green.
Odour	Chlorine Pungent.
Odour threshold - lower	No information available.
Odour threshold - upper	No information available.
pH-Value, Conc. Solution	>11 (15% solution).
pH-Value, Diluted solution	No information available.
Melting point	No information available.
Initial boiling point and boiling range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability state	No information available.
Flammability limit - lower(%)	No information available.
Flammability limit - upper(%)	No information available.
Vapour pressure	No information available.
Vapour density (air=1)	No information available.
Relative density	1.25 at 20 °C (Chlorine;15%);1.3, at 21.2 °C (Chlorine; 24.3%).
Bulk density	No information available.
Solubility	Soluble in water
Decomposition temperature	No information available.
Partition coeffiicient; n-Octanol/Water	No information available.
Auto ignition temperature (°C)	No information available.
Viscosity	No information available.
Explosive properties	No information available.
Oxidising properties	No information available.

9.2 Other information

Molecular weight	No information available.
Volatile organic compound	No information available.
Other information	None noted.

Section 10: Stability and reactivity

10.1 Reactivity

Reactivity	Corrosive to metals. Contact with acids liberates toxic gas.

10.2 Chemical stability

Stability	Stable under normal temperature conditions and recommended use.

10.3 Possibility of hazardous reactions

Hazardous reactions	Metals: Decomposition with formation of oxygen. Acids: Violent decomposition with release of chlorine.
Hazardous polymerisation	Unknown.
Polymerisation description	Not applicable.

10.4 Conditions to Avoid

Conditions to avoid	Heat, sparks, open flames, temperature extremes and direct sunlight. To avoid thermal decomposition do not overheat. Avoid freezing.

10.5 Incompatible materials

Materials to avoid	Metals, Salts of metals, Acids, Organic materials. Keep away from Nickel, Copper, Cobalt, Aluminium, Manganese.

10.6 Hazardous decomposition products

Hazardous decomposition products	Chlorine, Sodium chlorate, Hypochlorous acid, predominant at acid pH, is 4 to 5 fold more toxic than hypochlorite ion. The release of other hazardous decomposition products is possible.

Section 11: Toxicological information

11.1 Information on toxicological effects

Toxicological information	No toxicological information for the overall finished product.
Acute toxicity (Oral LD50)	LD50, rat, > 1,100 mg/kg (Chlorine).
Acute toxicity (Dermal LD50)	LD50, rabbit, > 20,000 mg/kg (Chlorine).
Acute toxicity (Inhalation LD50)	LC50, 1 h, rat, > 10.5 mg/l (Chlorine).
Serious eye damage/irritation	Causes serious eye damage.
Skin corrosion/irritation	No information available.
Respiratory sensitisation	Guinea pig, did not cause sensitization on laboratory animals.
Skin sensitisation	Guinea pig, did not cause sensitization on laboratory animals.
Germ cell mutagenicity	In vitro, ambiguous mutagenic effect. In vivo tests did not show mutagenic effects.
Carcinogenicity	No information available.
Specific target organ toxicity - Single exposure:	
STOT - Single exposure	Human experience, Remarks: May cause respiratory irritation.
Specific target organ toxicity - Repeated exposure:	
STOT - Repeated exposure	No information available.
Inhalation	Irritating to respiratory system. Symptoms: Breathing diffiiculties, cough, chemical pneumonitis, pulmonary oedema - Repeated or prolonged exposure: Nose bleeds, chronic bronchitis.
Ingestion	Severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Risk of shock and respiratory disorder. Symptoms: Nausea, abdominal pain, bloody vomiting, diarrhoea, suffocation, cough, and severe shortness of breath. Risk of chemical pneumonitis from product inhalation.
Skin contact	Corrosive! Can cause redness, pain, and severe skin burns. Symptoms: Redness, swelling of tissue, burns, ulceration.
Eye contact	Corrosive! Vapours are irritating and may cause damage to the eyes. May cause irreversible eye damage. May cause blindness. Symptoms: Redness, lachrymation, swelling of tissue, burn.

Waste management When handling waste, consideration should be made to the safety precautions applying to handling of the product. For wastewater containng product, do not discharge into ground or drain without treatment.

Routes of entry No information available.
Target organs Eyes, skin, digestive system, respiratory system.

Aspiration hazards: No information available.
Reproductive toxicity: Oral, rat, 5 mg/kg, Effects on fertility, NOAEL, (Chlorine). Oral, rat, 5.7 mg/kg, Developmental Toxicity, NOAEL, (Chlorine).

Name	LD50 oral	LD50 dermal	LD50 inhalation
SODIUM HYPOCHLORITE 5 - 16%	>1100.00mg/kg Rat	>20000.00mg/kg Rabbit	>10.50mg/l (vapours) Rat 1 Hours

Section 12: Ecological information

12.1 Toxicity

Acute toxicity - Fish Fishes, various species, LC50, 96 h, 0.06mg/l, fresh water (active chlorine). Fishes, Menidia peninsulae, NOEC, 96 h, 0.04 mg/l, salt water (Chlorine). Fishes, various species, 96 h, 0.032 mg/l, Marine water (active chlorine).
Acute toxicity - Aquatic invertebrates Crustaceans, various species, EC50, 48 h, 0.026 mg/l (Chlorine). Crustaceans, Daphnia magna, EC50, 48 h, 0.141 mg/l, fresh water (active chlorine).
Acute toxicity - Aquatic plants No information available.
Acute toxicity - Microorganisms No information available.
Chronic toxicity - Fish No information available.
Chronic toxicity - Aquatic invertebrates No information available.
Chronic toxicity - Aquatic plants No information available.
Chronic toxicity - Microorganisms No information available.
Ecotoxicity The product contains substance which is very toxic to aquatic life.
Eco toxilogical information The product contains a substance which is harmful to aquatic organisms.

12.2 Persistence and degradability

Degradability The methods for determining biodegradability are not applicable to inorganic substances.
Biological oxygen demand No information available.
Chemical oxygen demand No information available.

12.3 Bioaccumulative potential

Bioaccumulative potential Does not bioaccumulate.
Bioaccumulation factor No information available.
Partition coeffiicient; n-Octanol/Water No information available.

12.4 Mobility in soil

Mobility Mobile in water environment.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment The product does not contain any PBT or vPvB Substances.

12.6 Other adverse effects

Other adverse effects No information available.

Name	Acute toxicity (Fish)	Acute toxicity (Aquatic invertebrates)	Acute toxicity (Aquatic plants)
SODIUM HYPOCHLORITE 5 - 16%	LC50 96 Hours 0.06ppm Freshwater Fish	EC50 48 Hours 0.14ppm Daphnia magna	

Section 13: Disposal considerations

Waste management When handling waste, consideration should be made to the safety precautions applying to handling of the product. For wastewater containng product, do not discharge into ground or drain without treatment.

13.1 Waste treatment methods

Disposal methods Dispose of waste and residues in accordance with local authority requirements, and in accordance with all local, national and international regulations. For waste disposal, use a licensed industrial waste disposal agent.

Section 14: Transport information

14.1 UN number

UN no. (ADR)	UN1791
UN no. (IMDG)	UN1791
UN no. (IATA)	UN1791

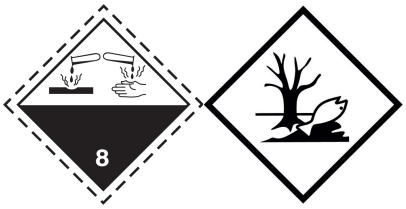
14.2 UN proper shipping name

ADR proper shipping name	HYPOCHLORITE SOLUTION
IMDG proper shipping name	HYPOCHLORITE SOLUTION
IATA proper shipping name	HYPOCHLORITE SOLUTION

14.3 Transport hazard class(es)

ADR class	8
IMDG class	8
IATA class	8

Transport labels



14.4 Packing group

ADR/RID/ADN packing group	II
IMDG packing group	II
IATA packing group	II

14.5 Environmental hazards

ADR	Yes
IMDG	Yes
IATA	Yes

14.6 Special precautions for user

EMS	F-A, S-B
Emergency action code	A3 A803
Hazard no. (ADR)	80
Tunnel restriction code	(E)

14.7 Transport in bulk according to annex II of MARPOL73/78 and the IBC code

Not applicable.

Section 15: Regulatory information

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

EU legislation Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments. The UN Globally Harmonized System (GHS) Safety Data Sheet format (Annex IV) is implemented as Annex II of REACH EU No 453/2010 of 20th

May 2010 amending regulation (EC) No 1907/2006.

Approved code of practice 2016 Code of Practice for the Chemical Agents Regulations in accordance with section 60 of the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005).

Chemical safety assessment No chemical safety assessment has been carried out.

Section 16: Other information

General information This Safety Data Sheet is in accordance with Reach Regulation (EC) No 453/2010
Revision comments This is first issue.
Revision date 1st April 2020
Revision 1
Safety data sheet status Approved.

Hazard statements in full

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
EUH031 Contact with acids liberates toxic gas.

Disclaimer
This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.