



The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued	04.08.2011
Revision date	29.01.2019

1.1. Product identifier

Product name	Hey'di Frost KF
Article no.	309,311
GTIN No.	7054150003094, 7054150003117

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

Function	Description: Liquid additive for mortar and concrete in freezing temperatures.
Use categories nordic (UCN).	A40300
Use of the substance / mixture	Used both for factory-made ready-mixed mortar and for cement mortar which is mixed at the workplace.
Relevant identified uses	SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys) SU19 Building and construction work SU21 Consumer uses: Private households (= general public = consumers) SU22 Professional uses: publicly accessible (administration, education, entertainment, services, craftsmen) PC4 Antifreeze and Deicing products PROC19 Hand-mixing in close conditions and only PPE available. ERC2 Formulation of preparations ERC5 Industrial use resulting in inclusion into or onto a matrix ERC8C Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8F Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Standard industrial classification (NACE)	23.650

1.3. Details of the supplier of the safety data sheet

Downstream user

Company name	HeyDi AS
Office address	Tretjerndalsvegen 68

Postcode	N-2016
City	Frogner
Country	Norway
Telephone number	+47 63868800
Email	heydi@heydi.no
Website	www.heydi.no
Enterprise No.	979657919
Contact person	Alan Ulstad

1.4. Emergency telephone number

Emergency telephone	Telephone number: +47 22 59 13 00 Description: The National Poisons Information Centre
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Acute tox. 4; H302
Substance / mixture hazardous properties	Eye Dam. 1; H318
	Harmful if swallowed. Causes serious eye damage.

2.2. Label elements

Hazard pictograms (CLP)



Composition on the label	Calcium nitrate tetrahydrate 50 - 70 %, Sodium nitrate 1 - 8 %
Signal word	Danger
Hazard statements	H302 Harmful if swallowed. H318 Causes serious eye damage.
Precautionary statements	P102 Keep out of reach of children. P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell. P280 Wear protective gloves/eye protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P313 Get medical advice / attention. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P501 Dispose of contents / container to licensed waste disposal site in accordance with local Waste Disposal Authority.
Tactile warnings	No
Child-protection	No

2.3. Other hazards

PBT / vPvB	This product does not contain any PBT or vPvB substances.
Health effect	See section 11 for additional information on health hazards.
Environmental effects	The product is not classified as environmentally harmful. Spills and contamination should be avoided. The hazardous properties of the product in the environment are considered to be limited.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents	Notes
Calcium nitrate tetrahydrate	CAS No.: 13477-34-4 EC No.: 233-332-1 REACH Reg. No.: 01-2119495093-35	Acute tox. 4; H302 Eye Dam. 1; H318	50 - 70 %	
Sodium nitrate	CAS No.: 7631-99-4 EC No.: 231-554-3 REACH Reg. No.: 01-2119488221-41	Ox. Sol. 3; H272 Eye Irrit. 2; H319	1 - 8 %	
Description of the mixture	Freezing point reducing nitrate solution.			
Substance comments	The full text for all hazard statements is displayed in section 16.			

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Inhalation of vapor / mist may cause irritation to the upper respiratory tract. Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	Flush skin thoroughly with water.
Eye contact	Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring these instructions.
Ingestion	Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

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

Acute symptoms and effects	Causes serious eye damage. Harmful if swallowed. Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract. Vapors may be irritating to the eyes and respiratory system
Delayed symptoms and effects	Inhalation causes irritation of the upper respiratory tract.

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

Medical treatment	Symptomatic treatment.
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Medical monitoring for delayed effects

IF exposed: Call a POISON CENTER or doctor/physician. In case of inhalation of decomposition products in a fire, the symptoms may be delayed.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Fight fire with normal precautions from a reasonable distance.

Improper extinguishing media

None.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards

The product is not combustible. During heating / fire, the water in the product will evaporate. The remaining dry matter can release oxygen. When water evaporates, toxic nitrous gas can be formed.

Hazardous combustion products

Nitrous gases (NO_x).

5.3. Advice for firefighters

Personal protective equipment

Fire fighting personnel should wear suitable protective equipment and self-contained breathing apparatus with full face mask. Use fresh air equipment when the product is involved in fire.

Fire fighting procedures

Use extinguishing measures appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters

Firefighters should use adequate protection.

Other information

Containers close to fire should be removed or cooled with water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Use personal protective equipment as specified in section 8. Keep animals away from contaminated area.

Personal protection measures

Use the specified protective equipment. See section 8.

For emergency responders

Use the specified safety equipment. See section 8

6.2. Environmental precautions

Environmental precautionary measures

Contain spillages with sand, earth or any suitable adsorbent material.

6.3. Methods and material for containment and cleaning up

Containment

Store in a closed container.

Clean up

Collect with absorbent, non-combustible material into suitable containers. Collect and reclaim or dispose in sealed containers in licensed waste. Product residues should be delivered to a hazardous waste disposal site.

6.4. Reference to other sections

Other instructions

See section 1 for emergency contact information.
See section 8 for information on appropriate personal equipment.
See section 13 for waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

Use appropriate protective equipment as described in section 8 when handling open containers. Before use, see operating instructions on the packaging. Eye wash facilities and emergency shower must be available when handling this product. When using do not eat, drink or smoke.

Protective safety measures

Safety measures to prevent fire

Store in a closed container.

Preventitive measures to protect the environment

Do not discharge into drains, soil or streams.

Advice on general occupational hygiene

Do not eat, drink or smoke in areas where this material is handled. Provide easy access to water supply and eye wash facilities. Good personal hygiene is necessary. Wash hands and contaminated areas before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage

Avoid contact with oxidising agents. Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed.

Conditions to avoid

Avoid contact with oxidising agents. Do not store near heat sources or exposed to high temperatures.

Conditions for safe storage

Technical measures and storage conditions

Keep out of reach of children.

Packaging compatibilities

Store in tightly sealed original packaging.

Additional information on storage conditions

Store in a well-ventilated place. Keep container tightly closed.

Storage stability

Best performance within 2 years of production date.

7.3. Specific end use(s)

Recommendations

Read the description in the technical datasheet about surface treatment before use.

Specific use(s)

Liquid additive for mortar and concrete in freezing temperatures.

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Substance	Identification	Exposure limits	TWA Year
Calcium nitrate tetrahydrate	CAS No.: 13477-34-4		
Sodium nitrate	CAS No.: 7631-99-4		

DNEL / PNEC

Substance	Calcium nitrate tetrahydrate
DNEL	Group: Professional Route of exposure: Acute dermal (systemic) Value: 13,9 mg/kg bw/day Group: Professional Route of exposure: Acute inhalation (systemic) Value: 24,5 mg/m ³
PNEC	Route of exposure: Saltwater Value: 0,045 mg/l Route of exposure: Freshwater Value: 0,45 mg/l Route of exposure: Sewage treatment plant STP Value: 18 mg/l
Substance	Sodium nitrate
DNEL	Group: Industrial Route of exposure: Long-term dermal (local) Value: 20,8 µg/kg bw/day Group: Industrial Route of exposure: Long-term inhalation (local) Value: 36,7 mg/m ³ Route of exposure: Long-term dermal (local) Value: 12,5 µg/kg bw/day Reference: General population. Route of exposure: Long-term inhalation (local) Value: 10,9 mg/m ³ Comments: General population. Route of exposure: Long-term oral (local) Value: 12,5 mg/kg bw/day Comments: General population.
PNEC	Route of exposure: Freshwater Value: 0,45 mg/l Route of exposure: Saltwater Value: 0,045 ml/l Value: 4,5 ml/l Reference: Periodic emissions.

8.2. Exposure controls**Safety signs**

Precautionary measures to prevent exposure

Appropriate engineering controls	Observe occupational exposure limits and minimize the risk of inhalation of vapours.
Instruction on measures to prevent exposure	The usual precautions for handling chemicals should be followed.

Eye / face protection

Required Properties	Wear tight-fitting goggles or face shield.
Suitable eye protection	Wear tight-fitting goggles or face shield.
Eye protection equipment	Description: Wear tight-fitting goggles or face shield. Reference to relevant standard: EN 166

Hand protection

Suitable gloves type	Gloves of nitrile rubber, PVA or Viton are recommended.
Suitable materials	Gloves of nitrile rubber, PVA or Viton are recommended.
Breakthrough time	Value: > 480 minute(s) Comments: Breakthrough time for the given glove material.
Hand protection equipment	Description: Gloves of nitrile rubber, PVA or Viton are recommended. Reference to relevant standard: EN 374

Skin protection

Suitable protective clothing	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Recommended protective clothing	Description: In case of direct contact or splash, wear protective clothing. Reference to relevant standard: EN 14605
Skin protection remark	In case of direct contact or splash protective clothing shall be applied.

Respiratory protection

Respiratory protection necessary at	In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment with combination filter (type A2/P2).
Recommended respiratory protection	Mask type: It is recommended to use respiratory equipment with combination filter, type A2/P2. Reference to relevant standard: EN 143

Thermal hazards

Thermal hazards	No recommendation given.
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Hygiene / environmental

Specific hygiene measures	Isolate contaminated clothing and wash before reuse. Wash at the end of each work shift and before eating, smoking and using the toilet.
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Appropriate environmental exposure control

Environmental exposure controls	The product must not be discharged directly into drains or waterways without
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	treatment.
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Exposure controls

Safety measures for consumer use of the chemical	Use the specified safety equipment. See section 8.
Exposure controls and personal protection, additional information	All protection should be CE marked. Contaminated clothes should be laundered before reuse.
Exposure controls, comments	Do not eat, drink or smoke while handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Lightly coloured. Tan.
Odour	Odourless.
pH	Status: In delivery state Value: ~ 6,5
Boiling point / boiling range	Value: ~ 110 °C
Flash point	Comments: Not relevant.
Evaporation rate	Comments: Not known.
Flammability	See section 5 for additional information.
Vapour pressure	Comments: Not known.
Relative density	Value: ~ 1390 kg/m³
Solubility	Comments: Miscible with water.
Partition coefficient: n-octanol/water	Comments: Not known.
Auto-ignition temperature	Comments: Not relevant.
Decomposition temperature	Comments: Not known.
Viscosity	Value: ~ 6,5 mPas
Explosive properties	No explosive properties.

9.2. Other information

Physical hazards

Miscibility	Miscible with water.
Conductivity	Comments: Not known.
Solvent content	Comments: Not relevant.
Water reactivity	Not known.
Air reactive	Not known.
Particle size	Comments: Not relevant.

Critical pressure	Comments: Not known.
Expansion coefficient	Comments: Not known.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No hazardous reactions if regulations/notes for storage and handling are observed.
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10.2. Chemical stability

Stability	Stable under recommended storage conditions - see Section 7.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Upon heating, water will evaporate first. Further heating can cause the dry matter to emit nitrous gas.
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10.4. Conditions to avoid

Conditions to avoid	Avoid exposing to heat and contact with strong oxidising substances.
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10.5. Incompatible materials

Materials to avoid	Avoid contact with oxidising agents. Avoid heat, flames and other sources of ignition.
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10.6. Hazardous decomposition products

Hazardous decomposition products	When heated and in case of fire, very toxic nitrogen oxides are formed.
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SECTION 11: Toxicological information

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

Substance	Calcium nitrate tetrahydrate
Acute toxicity	<p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Oral Method: OECD 423 Value: 500 mg/kg Animal test species: Rat Test reference: IUCLID 5</p> <p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Dermal Method: OECD 402 Value: > 2000 mg/kg Animal test species: Rat Comments: OECD 402</p>

Substance	Sodium nitrate
Acute toxicity	<p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Oral Method: OECD 401 Value: > 2000 mg/kg Animal test species: Rat</p> <p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Dermal Method: OECD 402 Value: > 5000 mg/kg Animal test species: Rabbit</p> <p>Type of toxicity: Acute Effect tested: LC50 Route of exposure: Inhalation. Animal test species: Rat</p> <p>Effect tested: NOEC Value: 1 - 5 mg/m³ Animal test species: sheep, dog Comments: aerosol or particle</p>

Other information regarding health hazards

Toxicokinetics	Not known.
Substance	Sodium nitrate
Skin corrosion / irritation test result	<p>Toxicity type: Acute Method: OECD 404 Species: Rabbit Evaluation result: Not irritation.</p>
Substance	Calcium nitrate tetrahydrate
Eye damage or irritation, test results	<p>Toxicity type: Acute Method: OECD 405 Exposure time: 72 hour(s) Species: Rabbit Evaluation result: 4 points Test reference: IUCLID 5</p>
Substance	Sodium nitrate
Eye damage or irritation, test results	<p>Toxicity type: Aspiration Method: OECD 405 Species: Rabbit Evaluation result: Irritating.</p>
Eye damage or irritation other information	May irritate and cause redness and pain.
Assessment of eye damage or irritation, classification	Spray and vapour in the eyes may cause irritation and smarting.
Substance	Sodium nitrate

Respiratory or skin sensitisation	Toxicity type: Acute Method: OECD 429 Evaluation result: Non sensitizing to skin.
General respiratory or skin sensitisation	Prolonged inhalation of high concentrations may damage respiratory system.
Respiratory sensitisation other information	Vapour may irritate respiratory system or lungs.
Sensitisation	No basis for classification as a sensitizer.
Substance	Sodium nitrate
Germ cell mutagenicity	Toxicity type: Acute Evaluation result: negative.
Mutagenicity	No recommendation given.
Substance	Sodium nitrate
Carcinogenicity	Toxicity type: Acute Method: NOAEL Route of exposure: Oral Effect value: $\geq 5\%$ Species: Rat Toxicity type: Acute Method: NOAEL Route of exposure: Oral Effect value: ≥ 4000 mg/l Species: Rat Comments: Drinking water.
Carcinogenicity, other information	No recommendation given.
Substance	Calcium nitrate tetrahydrate
Reproductive toxicity	Toxicity type: Reproductive / developmental toxicity Method: OECD 422 Dose: > 1500 mg/kg bw /d Route of exposure: Oral Exposure time: 28 day(s) Species: Rat Test reference: IUCLID 5
Substance	Sodium nitrate
Reproductive toxicity	Toxicity type: Acute Method: NOAEL OECD 422 Effect value: ≥ 1500 mg/kg bw /d
Reproductive toxicity	No recommendation given.

Symptoms of exposure

In case of ingestion	The product causes irritation of mucous membranes and may cause abdominal discomfort if swallowed.
In case of skin contact	No data recorded.
In case of inhalation	Inhalation of vapor / mist may cause irritation to the upper respiratory tract.

In case of eye contact	Strongly irritating.
Other information	Health hazard is dependent on the use and protection measures.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Calcium nitrate tetrahydrate
Aquatic toxicity, fish	Toxicity type: Acute Value: 1378 mg/l Effect dose concentration: LC50 Exposure time: 96 hour(s) Method: OECD 203 Test reference: IUCLID 5
Substance	Sodium nitrate
Aquatic toxicity, fish	Toxicity type: Acute Value: 6000 mg/l Effect dose concentration: LC50 Exposure time: 96 hour(s)
Substance	Calcium nitrate tetrahydrate
Aquatic toxicity, algae	Toxicity type: Acute Value: > 1700 mg/l Effect dose concentration: EC50 Exposure time: 10 day(s) Method: Salt water. Test reference: IUCLID 5
Substance	Sodium nitrate
Aquatic toxicity, algae	Toxicity type: Acute Value: 1700 mg/l Effect dose concentration: IC50 Exposure time: 72 hour(s)
Substance	Calcium nitrate tetrahydrate
Aquatic toxicity, crustacean	Toxicity type: Acute Value: 490 mg/l Effect dose concentration: EC50 Exposure time: 48 hour(s) Method: Freshwater. Test reference: IUCLID 5
Substance	Sodium nitrate
Aquatic toxicity, crustacean	Toxicity type: Acute Value: 8600 mg/l Effect dose concentration: EC50 Exposure time: 48 hour(s) Species: Crustacea Method: OECD 202 Toxicity type: Acute Value: 8600 mg/l

Aquatic, comments	Effect dose concentration: EC50 Exposure time: 24 hour(s) Species: Daphnia magna Method: OECD 202
	Not classified as dangerous for the environment. However, the product must not be discharged into drains or water courses or deposited where it can affect ground or surface waters. Undiluted, the product can contribute to eutrophication of aquatic systems and be toxic to aquatic organisms.

12.2. Persistence and degradability

Persistence and degradability description/evaluation	This product does not contain any PBT or vPvB substances.
Chemical oxygen demand (COD)	Comments: Not known.
Biological oxygen demand (BOD)	Comments: Not known.
Persistence and degradability, comments	The product is easily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential	Will not bio-accumulate.
Bioconcentration factor (BCF)	Comments: Not known.

12.4. Mobility in soil

Mobility	The product is soluble in water.
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12.5. Results of PBT and vPvB assessment

PBT assessment results	Not Classified as PBT/vPvB by current EU criteria.
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12.6. Other adverse effects

Environmental details, summation	Do not empty into drains or other waterways.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Dispose of waste and residues in accordance with local authority requirements.
EWC waste code	EWC waste code: 061002 wastes containing dangerous substances Classified as hazardous waste: Yes
EWL packing	EWC waste code: 150110 packaging containing residues of or contaminated by dangerous substances Classified as hazardous waste: Yes
National regulations	Regulation 01.06 2004 nr. 930, on recycling of waste with subsequent amendments. Guidelines (Norsas) on collection and declaration of hazardous waste (2015).
NORSAS	7131

SECTION 14: Transport information

Dangerous goods	No
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14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

14.7. Maritime transport in bulk according to IMO instruments

Additional information

Additional information	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
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SECTION 15: Regulatory information

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

Assessed restrictions	By assessment no identified restrictions.
Restriction of chemicals according to Annex XVII (REACH)	No restrictions identified.
Other labelling requirements	No other labeling requirements.
Other label information	None.
References (laws/regulations)	EU Regulation No. 1907/2006 (REACH) Title IV, art. 31 and Annex II. EU Regulation on classification labeling and packaging of substances and preparations (abbreviated CLP) (EC) No 1272/2008 Annex XIV - List of substances subject to authorization. Substances that give great cause for concern. Annex XVII - Restrictions on the production, marketing and use of certain hazardous substances. Regulation 704 on occupational limit values with changes. EU Waste regulation (EU) nr. 413/2010 with changes ADR / RID 2019 Regulation No. 384 01 April 2009.
Declaration No.	311083

15.2. Chemical safety assessment

Chemical safety assessment performed	No
Chemical safety assessment	Not determined.

Exposure scenarios for mixture	No
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SECTION 16: Other information

Supplier's notes	Information provided in the safety data sheet is prepared on the basis of information supplied by subcontractors, and according to information in our possession at the last entered revision date. The information is to be regarded as guidelines for safe use, processing, storage and transportation. It is assumed that the product is used in accordance with the description on the packaging or in the technical data sheet/product data sheet prepared by Hey'di AS. Any other use of the product, if necessary in combination with other products or processes are not recommended, unless otherwise agreed with Hey'di AS.
List of relevant H-phrases (Section 2 and 3)	H272 May intensify fire; oxidiser. H302 Harmful if swallowed. H318 Causes serious eye damage. H319 Causes serious eye irritation.
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