SAFETY DATA SHEET
THAW
According to Regulation (EC) No 1907/2006, Annex II, as amended.

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

1.1. Product identifier

Product name THAW

Internal identification C102

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

Identified uses De-icing granules

Uses advised against Use only for intended applications.

1.3. Details of the supplier of the safety data sheet

Supplier

ARROW SOLUTIONS
RAWDON ROAD
MOIRA
SWADLINCOTE
DERBYSHIRE
DE12 6DA
TEL: +44 (0)1283 221044
FAX: +44 (0)1283 225731
sales@arrowchem.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 777 8505 330 (24 hrs). +44 (0) 1865 407333 (24 hrs). MEDICAL AND ENVIRONMENTAL EMERGENCIES ONLY.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Not Classified

Environmental hazards Not Classified

2.2. Label elements

Hazard statements NC Not Classified

Supplemental label information EUH210 Safety data sheet available on request.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

THAW

SECTION 3: Composition/information on ingredients

3.2. Mixtures

UREA		**60-100%**
CAS number: 57-13-6	EC number: 200-315-5	REACH registration number: 01-2119463277-33-XXXX

Classification
Not Classified

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Show this Safety Data Sheet to the medical personnel. Remove affected person from source of contamination.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Ingestion Get medical attention. Do not induce vomiting. Rinse mouth thoroughly with water.

Skin contact Rinse immediately with plenty of water.

Eye contact Rinse with water. Remove any contact lenses and open eyelids wide apart. Continue to rinse. Get medical attention if any discomfort continues.

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

Inhalation Coughing, chest tightness, feeling of chest pressure.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact Product has a defatting effect on skin. Prolonged contact may cause dryness of the skin.

Eye contact May cause discomfort.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Ammonia or amines. Carbon monoxide (CO). Carbon dioxide (CO_2). Nitrous gases (NO_x).

5.3. Advice for firefighters

Protective actions during firefighting No specific firefighting precautions known.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Avoid contact with skin, eyes and clothing. Keep unnecessary and unprotected personnel away from the spillage. Avoid inhalation of dust. Do not touch or walk into spilled material. Provide adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Take precautionary measures against static discharges. Take care as floors and other surfaces may become slippery. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment. Wash thoroughly after dealing with a spillage.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains and the aquatic environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Avoid generation and spreading of dust. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Wear protective gloves. Avoid handling which leads to dust formation. Avoid contact with skin, eyes and clothing. Avoid inhalation of dust. Provide adequate ventilation. Take precautionary measures against static discharges. Do not empty into drains. Do not eat, drink or smoke when using this product. Do not handle broken packages without protective equipment. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store at temperatures between 0°C and 30°C. Store in tightly-closed, original container in a dry and cool place.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Protective equipment

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Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 4 hours. The breakthrough time for any glove material may be different for different glove manufacturers. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. When used with mixtures, the protection time of gloves cannot be accurately estimated. Protective gloves should have a minimum thickness of 0.12 mm. Glove thickness is not necessarily a good measure of glove resistance as the permeation rate will depend on the exact glove composition. The choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Specific work environments and material handling practices may vary, therefore safety procedures should be developed for each intended application. Repeated exposure to chemicals will degrade the ability of the glove to provide resistance to chemicals. Gloves made from the following material may provide suitable chemical protection: Nitrile rubber. Neoprene.

Hygiene measures Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

Respiratory protection Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Particulate filters should comply with European Standard EN143. Wear a suitable dust mask.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance Granules.

Colour White.

Odour Mild. Ammonia.

pH pH (diluted solution): ~9.5 @ 10%w/w

Melting point ~ 134°C

Bulk density 1.33 kg/m³

Solubility(ies) Completely soluble in water.

9.2. Other information

Molecular weight 60.06

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The following materials may react with the product: Acids. Alkalis. Inorganic nitrates.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not determined.

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10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Strong acids. Strong alkalis. Inorganic nitrates.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion products may include the following substances: Ammonia or amines. Carbon monoxide (CO). Carbon dioxide (CO_2). Nitrous gases (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Inhalation Dust may irritate the respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact Prolonged contact may cause dryness of the skin. Dust may cause slight irritation.

Eye contact May cause discomfort.

Toxicological information on ingredients.

UREA

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	14,300.0
Species	Rat
ATE oral (mg/kg)	14,300.0

SECTION 12: Ecological Information

Ecotoxicity Not regarded as dangerous for the environment.

12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish Not determined.

Ecological information on ingredients.

UREA

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >6810 mg/l, Leuciscus idus (Golden orfe)
Acute toxicity - aquatic plants	NOEC, 192 hours: 47 mg/l, Freshwater algae

12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

Ecological information on ingredients.

UREA

Biodegradation	- Degradation 96%: 16 days

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12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Ecological information on ingredients.

UREA

Partition coefficient log Pow: -1.73

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

Special Provisions note

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

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SECTION 15: Regulatory information

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

National regulations Control of Substances Hazardous to Health Regulations 2002 (as amended).

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 (as amended).
Commission Regulation (EU) No 453/2010 of 20 May 2010.
Commission Regulation (EU) No 2015/830 of 28 May 2015.

Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
NOEC: No Observed Effect Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
UN: United Nations.
vPvB: Very Persistent and Very Bioaccumulative.

Revision comments NOTE: Lines within the margin indicate significant changes from the previous revision.

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Revision 2.2

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