

MATERIAL SAFETY DATA SHEET // INUTEQ-PAC 21°C ACCORDING TO REGULATION (EC) NO. 1907/2006

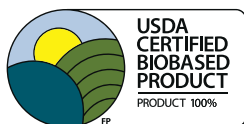
Version: 2.0 Reversion Date: 13.06.2016 Product code: LBG3352 Date of last issue: - Print Date: 06.04.2020
Date of first issue: 13.06.2016

INUTEQ-PAC 21°C is a water insoluble organic phase change material (PCM) derived from plant-based feedstocks and has the form of a crystalline wax or oily liquid (depending on temperature).

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

1.1 Product identifier

Trade name INUTEQ-PAC@21C



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

Use of the substance/Mixture:
Heat transfer agents

1.3 Details of the supplier of the safety data sheet

Company: INUTEQ B.V.
Osnabrückstraat 30
7418 BN Deventer
Tel. :+31850653797
support@inuteq.com

1.4 Emergency telephone number

USA: 24 Hour Emergency Response Information CHEMTREC toll free: 1-800-424-9300; direct/international: 1-703-527-3887. CANADA: CANUTEC 1-888-CAN-UTEC (226-8832), 613-996-6666 or *666. EUROPE: 00 32 3575 5555. ASIA PACIFIC - excl. China: +65 6542-9595. CHINA: +86 816-635 2206. AUSTRALIA: +61 2 9616 5890. SOUTH AFRICA: +32 3 575 55 55. BRASIL: Suatrans 0800 707 7022 / 0800 707 1767. LATAM: Suatrans (+55) 11 98149-0850 / (+55) 19 3833-5300. INDIA: +91 22 309486-01/2. JAPAN: +65 6542 9595 (24時間日本語対応無料通話, シンガポール). TÜRKIYE: Sağlık Bakanlığı Ulusal Zehir Merkezi - 114

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture Classification (REGULATION) (EC) No 1272/2008

Not a hazardous substance or mixture.

2.2 Label elements Labelling (REGULATION) (EC) No 1272/2008

Not a hazardous substance or mixture.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/ information on ingredients

3.1 Substances

Hazardous components

Remarks: No dangerous ingredients according to Regulation (CE) No. 1907/2006

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled: If breathed in, move person into fresh air. If symptoms persist, call a physician.

In case of contact, skin contact: immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If symptoms persist, call a physician.

In the case of contact eye contact: with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed, call a poison control centre or doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: None known.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: In case of fire hazardous decomposition products may be produced such as: Carbon oxides

Do not use a solid water stream as it may scatter and spread fire.

5.3 Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

Further information: Prevent fire extinguishing water from contaminating surface water or the ground water system. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment.

6.2 Environmental precautions

Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

6.4 Reference to other sections: None.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Store in original container. Container which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place.

Advice on common storage: No special restrictions on storage with other products.

Further information on storage stability: Stable under recommended storage conditions.

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7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Eye protection: Tightly fitting safety goggles

Hand protection: Impervious gloves

Skin and body protection: Impervious clothing

Respiratory protection: In the case of vapour formation use a respirator with an approved filter

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: Liquid
Colour: Colourless
Light yellow
Odour: Slight
Oudour Threshold: No data available
pH: Not applicable
Melting point: approximately 21 °C
Boiling point: No data available
Flash point: 208 °C
Method: open cup

Evaporation rate: No data available
Flammability (solid, gas): No data available
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapour pressure: No data available
Relative vapour density: No data available
Density: 0.850 g/cm³ (30 °C)
947 kg/m³
Solid form

Solubility(ies)

Water solubility: Insoluble
Solubility in other solvents: Soluble
Solvent: Ethanol

Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available

Viscosity

Viscosity, dynamic: 9.05 mPa.s (25 °C)

Viscosity, kinematic: No data available

Explosive properties: Classification Code: No data available

Oxidizing properties: No data available

9.2 Other information

Oxidizing potential: No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

Hazardous reactions: Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid: None known.

10.5 Incompatible materials

Materials to avoid: Strong oxidizing agents

10.6 Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:
Acute oral toxicity: LD50 Oral (Rat): estimated > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity. Remarks: Information given is based on data obtained from similar substances. Information taken from reference works and the literature.
Acute inhalation toxicity: No data available
Acute dermal toxicity: No data available

Skin corrosion/irritation

Product:
Assessment: Based on available data, the classification criteria are not met.
Remarks: Information given is based on data obtained from similar substances. Information taken from reference works and the literature.

Serious eye damage/eye irritation

Product:
Assessment: Based on available data, the classification criteria are not met.

Remarks: Information given is based on data obtained from similar substances. Information taken from reference works and the literature.

Respiratory or skin sensitisation

Product:
Remarks: No data available

Germ cell mutagenicity

Product:
Genotoxicity in vitro: Remarks: No data available

Carcinogenicity

Product:
Test substance: No data available

Reproductive toxicity

Product:
Effects on fertility: Test substance: No data available

STOT - single exposure

Product:
Assessment: No data available

STOT - repeated exposure

Product:
Assessment: No data available

Aspiration toxicity

Product:
No data available

Further information

Product: No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:
Toxicity to fish: Remarks: No data available

12.2 Persistence and degradability

Product:
Biodegradability: Remarks: Expected to be biodegradable
Information given is based on data obtained from similar substances. Information taken from reference works and the literature.

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12.3 Bioaccumulative potential

Product:

Bioaccumulation: Remarks:
No data available

12.4 Mobility in soil

Product:

Distribution among environmental compartments: Remarks:
No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment: This substance/
mixture contains no components
considered to be either persistent,
bioaccumulative and toxic (PBT), or very
persistent and very bioaccumulative
(vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Additional ecological information: Aquatic toxicity
is unlikely due to low solubility.
Information given is based on data
obtained from similar substances.
Information taken from reference works
and the literature.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: Dispose of in
accordance with
local regulations.

Contaminated packaging: Empty remaining
contents. Do not re-use empty containers.
Empty containers should be taken to an
approved waste handling site for recycling
or disposal.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks: Not classified as
dangerous in the meaning of transport
regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC code

Not applicable for products as supplied

SECTION 15: Regulatory information

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

The components of this product are reported in the following inventories:

TSCA: All chemical
substances in this
product are listed on
the TSCA Inventory

REACH: On the inventory, or
in compliance with
the inventory

DSL: This product con-
tains one or several
components listed in
the Canadian NDSL.

ENCS: On the inventory, or
in compliance with
the inventory.

ISHL: On the inventory, or
in compliance with
the inventory.

KECI: On the inventory,
or in compliance
with the inventory.

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; DIN - Standard of the German Institute for Standardization; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organization for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TRGS - Technical Rule for Hazardous Substances; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philip-pines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CMR - Carcinogen, Mutagen or Re-productive Toxicant; GLP - Good Laboratory Practice.

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INUTEQ-SEAL® (PACKAGING FILM)

- 1. Composition**
Film based on thermoplastic polyurethane.
- 2. Possible Hazards**
Polyurethane films are not hazardous articles under the Council of the European Communities Directives. Polyurethane films do not present any specific hazards to health or safety when used in accordance with reasonable industrial practice, hygiene and good housekeeping.
- 3. First aid measures**
Skin contact; Injuries from molten material require medical treatment. Cool immediately with water and consult a physician.
- 4. Fire-fighting measures**
Extinguishing Media: water, foam, dry powder, carbon dioxide.
- 5. Accidental release measures**
No special measures required.
- 6. Handling and storage**
No special protective measures against fire and explosion required. Store the films in a cool, dry place.
- 7. Physical and chemical properties**
Odour: natural / transparent Ignition temperature: >250C
- 8. Ecological information**
No effects known to be harmful to the environment. Non-water hazardous.
- 9. Disposal considerations**
Polyurethane films may be discharged or incinerated together with household refuse if local official regulations are observed. The material can be recycled in its original and uncontaminated condition.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.