BLUE ANGEL

The Environmental Label

Movement Area De-icers for Airfields

DE-UZ 99

Basic Award Criteria

Edition January 2021

Version 2

The environmental label is underpinned by the following institutions:

Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit) is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.

Umwelt Bundesamt

The German Environment Agency with its specialist department for "Ecodesign, Eco-Labelling and Environmentally Friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.

Jury Umweltzeichen

The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.

RAL gGmbH

RAL gGmbH is the awarding body for the environmental label. It organises the process for developing the relevant award criteria in independent, expert hearings – which involve all relevant interest groups.

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Version 1 (01/2021): First edition, term of validity until 31/12/2025
Version 2 (01/2025: Changes to Paragraph 3.5 (new hazard classes added) Extension until 31/12/2027

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1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environment Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.
Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.
The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets these conditions.

1.2 Background

Alongside mechanical clearing technologies, precipitation in the form of snow and freezing wintry rain at German airfields also requires the use of movement area de-icers for improving grip on runways, taxiways, aprons with parking spaces, hangar aprons and run-up, manoeuvring and offset areas. It is only using these de-icers that flight safety can be maintained during take-off, landing and taxiing. After movement area de-icers have been used, these products either make their way into the public waste water system via the sewers or directly into the ground and thus into groundwater (seepage) and surface waters (direct or indirect discharge). In the area of movement area de-icers, formates have become the accepted standard on the European market while de-icing salt, urea and glycols are no longer used in this sector. Nevertheless, the environmental label remains relevant because it is used as an international standard for the selection of movement area de-icers (ADV 2020) and also evaluates additives such as corrosion inhibitors.

1.3 Objectives of the environmental label

The environmental label for movement area de-icers with low COD values (chemical oxygen demand) should make it possible for users of these types of de-icer to select those products that stand out due to their ready biodegradability, low ecological toxicity and the lowest possible discharge of pollutants into the waste water system (COD, nitrogen, chloride, heavy metals) and thus reduce the environmental impact after winter maintenance at airports, as well as the impact on waste water treatment plants.

The following benefits for the environment and health are stated in the explanatory box:

1.4 Definitions

ADV: German Airports Association (Arbeitsgemeinschaft Deutscher Verkehrsflughäfen), organisation and body representing civil airports for the exchange of information on areas such as law, business, infrastructure, technology, environmental protection, traffic, human resources and social welfare.
AIR: Aerospace Information Report
AMS: Aerospace Material Specification
Movement areas: Airport operation areas such as runways, taxiways and aprons on which aircraft are manoeuvred.
COD: Chemical oxygen demand
DOC: Dissolved organic carbon
De-icing agents: Chemical agents that defrost and lower the freezing point to provide anti-freezing protection (preventative) and de-icing (reactive).
OECD: Organisation for Economic Co-operation and Development
PFC: Perfluorinated and polyfluorinated chemicals
Product: Finished formulation for a movement area de-icing agent
REACH: Regulation for chemical legislation in the European Union (Registration, Evaluation, Authorisation and Restriction of Chemicals).
SAE: International Engineering Society for Advancing Mobility Land, Sea, Air and Space
SVHC: Substances of very high concern

2 Scope

These Basic Award Criteria apply to movement area de-icers for use on airfields.

3 Requirements

The products named under Paragraph 2 can be labelled with the environmental label illustrated on the first page of these Basic Award Criteria if they fulfil the following requirements.

3.1 Product information

Standard documentation on the movement area de-icing agents such as safety data sheets, product descriptions and SAE or AMS certificates, as well as any updated versions, must be submitted by the manufacturer. In addition, RAL must be provided with a full list of all ingredients. This information will be handled confidentially.

Compliance verification

The applicant shall submit safety data sheets, product descriptions and the SAE or AMS approvals and a full list of all ingredients (Annex 2) and shall also submit the corresponding documents again in the event of any updates.

3.2 Biodegradability

The organic ingredients in the product greater than 1% by mass must be classified as being readily biodegradable.
In addition, the whole product must exhibit good biodegradability in municipal waste water treatment plants. The test results from a Zahn-Wellens test should be used as a model. Inorganic product components are not taken into account in this context.

Compliance verification

The applicant shall verify the ready biodegradability of the organic ingredients by submitting one of the following tests (OECD Guideline for Testing of Chemicals (1992) 301 A-F or Regulation (EC) 440/2008, C.4 A-F or the relevant ISO standard):

- *DOC - Die Away Test (OECD 301 A, EG C.4 – A, DIN EN ISO 7827)*
- *Modified OECD screening test (OECD 301 E, EG C.4 – B, DIN EN ISO 7827*
- *CO2 development test (OECD 301 B EG C.4 – C, DIN EN ISO 9439)*
- *Manometric respirometry test (OECD 301 F, EG C.4 – D, DIN EN ISO 9408)*
- *Closed bottle test (OECD 301 D, EG C.4 – E, DIN EN ISO 10707)*
- *MITI test (I) (OECD 301 C, EG C.4 - F)*
- *CO2 headspace test (OECD 310, DIN EN ISO 14593)*
- *Closed bottle test in two phases (BODIS test, ISO 10708)*

Substances are considered to be readily biodegradable when the following minimum degradation values are achieved within a 10-day window during the 28-day studies listed above:

- *Tests based on dissolved organic carbon: 70%;*
- *Tests based on oxygen consumption or carbon dioxide generation: 60% of the theoretical maximum.*

The applicant shall verify the biodegradability of the product by submitting a test report for the Zahn-Wellens test according to OECD 302 B, DIN EN ISO 9888 or Regulation (EC) 440/2008, C.9. A DOC or COD reduction of at least 80% must be achieved within 7 days.

3.3 Chemical oxygen demand

The products must comply with a chemical oxygen demand (COD) limit of 0.25 g O_2/g of product.

Compliance verification

The applicant shall verify compliance with the requirement in Paragraph 3.3. by submitting a test report on the COD value in accordance with DIN 38 409-41 or DIN ISO 15705.

3.4 Limitations on ingredients

The following values may not be exceeded in the products:

- Nitrogen content: 100 mg/kg
- Phosphorous content: 800 mg/kg
- Chloride content: 100 mg/kg

Compliance verification

The applicant shall verify compliance with the requirement in Paragraph 3.4. by submitting a test report for the total bound nitrogen in accordance with DIN EN 12260 or DIN EN 16169, the phosphorus content in accordance with DIN EN ISO 6878 and the chloride content in accordance with DIN EN ISO 10304-1 or DIN 38405-1.
The testing institution shall report the measured values and confirm compliance with the criteria.

3.5 General exclusion of substances with certain properties

The following substances may not be added:

a) Substances which are identified as particularly alarming under the European Chemicals Regulation REACH (1907/2006/EC) and which have been incorporated into the list drawn up in accordance with Article 59, Paragraph 1 of the REACH Regulation (so-called "list of candidates"). The version of the list of candidates at the time of application is valid.[1] If the substance is part of a mixture, its concentration must not exceed 0.1% by mass. If a stricter, more specific concentration limit is specified for a substance in a mixture in criteria for the GHS Regulation (EC/1272/2008) then this is valid.

b) Ingredient which according to the criteria of Regulation (EC) No 1272/2008[2] are assigned the following H Phrases named in the table or which meet the criteria for such classification. If the substance in this case is part of a mixture then its concentration may not exceed the general generic cut-off values according to the GHS Regulation (EC/1272/2008). If a stricter, more specific concentration limit is specified for a substance in a mixture then this is valid.

c) The following are exempt from regulations a) and b): Impurities in concentrations that are not specified in the safety data sheet. The components listed on the safety data sheet must correspond with the regulations according to Annex II, No. 3, of the REACH regulation (EC/1907/2006). If the substance in this case is part of a mixture then its concentration may not exceed the general generic cut-off values according to the GHS Regulation (EC/1272/2008). If a stricter, more specific concentration limit is specified for a substance in a mixture then this is valid.

[1] The current version of the list of candidates (https://www.echa.europa.eu/de/candidate-list-table) and classifications according to the CLP Regulation at the time of application are valid. The label holder is obligated to take into account current developments and classifications on the list of candidates. If an ingredient is newly added to the list of candidates or a substance is newly classified during the term of the Basic Award Criteria, the label holder must submit an informal notification within two months stating the name of the substance, its CAS number and possible substitutes. In consultation with the German Environment Agency, a deadline for substituting this ingredient or substance may then be defined.

[2] 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, as well as amending Regulation (EC) No. 1907/2006 (GHS Regulation).

Regulation 1272/2008 (GHS Regulation)	Wording
Toxic substances	
H300	Fatal if swallowed
H301	Toxic if swallowed
H304	May be fatal if swallowed and enters airways
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H317	May cause an allergic skin reaction
H330	Fatal if inhaled
H331	Toxic if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H370	Causes damage to organs
H371	May cause damage to organs
H372	Causes damage to organs, repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
Carcinogenic, mutagenic and reprotoxic substances	
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H350i	May cause cancer if inhaled.
H351	Suspected of causing cancer.
H360F	May damage fertility.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H361f	Suspected of damaging fertility.
H361d	Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H362	May cause harm to breast fed children.
Water-hazardous substances	
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long-lasting effects.
H411	Toxic to aquatic organisms with long-lasting effects.
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic organisms
Other Health and Environmental Effects	
EUH059 (H420)	Hazardous to the ozone layer

Regulation 1272/2008 (GHS Regulation)	Wording
Endocrine substances with a negative effect on human health[3]	
EUH380	May cause endocrine disruption in humans
EUH381	Suspected of causing endocrine disruption in humans
Endocrine substances with a negative effect on environment[4]	
EUH430	May cause endocrine disruption in the environment
EUH431	Suspected of causing endocrine disruption in the environment
Persistent, bioaccumulative and toxic substances or very persistent and very bioaccumulative substances[4]	
EUH440	Accumulates in the environment and living organisms including in humans
EUH441	Strongly accumulates in the environment and living organisms including in humans
Persistent, mobile and toxic substances or very persistent and very mobile substances[4]	
EUH450	Can cause long-lasting and diffuse contamination of water resources
EUH451	Can cause very long-lasting and diffuse contamination of water resources

Compliance verification

The applicant shall declare compliance with the requirements in Annex 3 to the contract according to DE-UZ 99. The manufacturer shall verify that he/she has requested that the suppliers of primary/intermediate products submit information on the pollutant content (up to 0.01% by mass) and submit the answers from the suppliers of the primary/intermediate products.

3.6 Exclusion of certain harmful substances

The following hazardous substances may not be added to the product:

- Triazoles as anti-corrosion protection
- Perfluorinated and polyfluorinated chemicals (PCs)
- Alkylphenol ethoxylate (Octylethoxylate or Nonylethoxylate)
- The complexing agents EDTA and NTA

The following heavy metals may only be contained in the product up to a maximum level of 0.1 mg/kg: arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg) and nickel (Ni).

Compliance verification

The manufacturer shall submit a declaration in accordance with Annex 1. The manufacturer shall verify compliance with the limit for the concentrations of heavy metals (except mercury) by submitting a test report in accordance with DIN EN ISO 11885 or DIN EN ISO 17294-2 in combination with a suitable digestion process (e.g. nitric acid digestion, aqua regia digestion).

[3] The classification and labelling of substances according to the new hazard class is mandatory from 01/05/2025 onwards. This information must then be taken into account for the de-icers.

[4] The classification and labelling of substances according to the new hazard classes is mandatory from 01/11/2026 onwards. This information must be taken into account for the de-icers.

The methods DIN EN ISO 12846 or DIN EN ISO 17852 must be used for the determination of mercury. The determination limits of these methods must be stated in the test report. Polyflurorinated compounds must be determined in accordance with DIN 38407-42 and must be also be verified by submitting a test report.

3.7 Waste water toxicity

The product may not contain any ingredients that display an aquatic ecotoxicity for algae, daphnia, fish and bacteria in the product of EC50 ≤ 100 mg/l.

Compliance verification

The applicant shall submit tests for each of the groups of organisms named below:

- *Daphnia test in accordance with OECD 202 Part I, EG C.2 or DIN EN ISO 6341*
- *Fish test in accordance with OECD 203, EG C.1 or a fish embryo test in accordance with DIN EN ISO 15088 or OECD 236*
- *Algae test in accordance with OECD 201, EG C.3 or ISO 8692*
- *Bacteria test (pseudomonas cell multiplication inhibition test) in accordance with DIN EN ISO 10712 or a luminescent bacteria test in accordance with DIN EN ISO 11348-1 or DIN EN ISO 11348-2*

Compliance with the aquatic toxicity requirements can also be verified by testing the product. If there is no fish test available for the product, performing a new test as verification for the Blue Angel is not permitted because this involves testing vertebrate animals (exception OECD 236 or Part C49 of the Annex for Regulation (EG) No 440/2008).

3.8 Technical requirements and fitness for use

The de-icer must comply with the applicable requirements for its fitness for use and safety. The de-icing effect must be experimentally proven in a standard process.

Compliance verification

The applicant shall submit a declaration in accordance with Annex 1 that the technical requirements for the product in accordance with SAE, AMS 1435 for liquid de-icers or AMS 1431 for solid de-icers have been observed and shall also submit the relevant reports.
The experimental data for the de-icing effect of the product should be determined under specified temperature conditions (-2°C, -10°C) after 5, 10 and 30 minutes in accordance with the SAE AIR 6170 test method. (SAE - International Engineering Society for Advancing Mobility Land, Sea, Air and Space; AMS - Aerospace Material Specification; AIR - Aerospace Information Report).

3.9 Consumer information

In order to ensure the economical and optimal use of the de-icer as part of airport winter maintenance, the product documentation must include information about the recommendations contained in the currently valid versions of the winter maintenance handbook issued by the ADV (German Airports Association) and the ADV guidelines "Handlungsleitfaden zu Enteisungsabwasser. Umweltschonender Einsatz von Flächen- und Flugzeugenteisungsmittel" (De-icing material in waste water. Environmentally friendly use of movement area and aircraft de-icing agents).

Compliance verification

The applicant shall submit the corresponding pages of the product documentation as Annex 4 to the contract as verification of compliance with the requirement in Paragraph 3.9.

3.10 Testing institutes

The applicant must submit test reports from testing institutions to verify compliance with the requirements in Paragraphs 3.2, 3.3, 3.4, 3.6 and 3.7.
The testing institution must verify that:

- the tests carried out to produce all of the test results in accordance with Paragraphs 3.2, 3.3, 3.4, 3.6 and 3.7 correspond to the requirements of good laboratory practice (Annex 1 of ChemG)

or

- the testing institution is accredited according to DIN EN ISO/IEC 17025 and the testing field, procedures and specifications used for those tests carried out to produce all of the required test results are part of this accreditation. Tests carried out before the publication of the Basic Award Criteria that are based on the GLP guidelines will be recognised if they correspond to the test requirements in these Basic Award Criteria.

Compliance verification

Verification shall be submitted in the form of:

- *certification in accordance with § 19b ChemG*
- *the applicant shall submit a written declaration from the testing institution that the tests have been carried out in accordance with the principles of good laboratory practice or*
- *an accreditation certificate from the German Accreditation Body (DAkkS) or another national accreditation system that has been included in the Multilateral Agreement (MLA).*

4 Outlook

The following points will be examined in the next revision of the Basic Award Criteria:

- Amending the limit for the chemical oxygen demand (Paragraph 3.3) so as not to exclude the use of other organic de-icing products (especially acetate).
- Amending the phosphate requirements (Paragraph 3.4) after checking the product information.
- Amending the criteria for the biodegradability of the product (Paragraph 3.2) by shortening the length of the Zahn-Wellens test and amending the definition for "good biodegradability in waste water treatment plants".
- Presenting the different methods for producing formates and thus the associated residual content of nickel, as well as information on the ecological impact of the manufacturing process.

5 Applicants and parties involved

Manufacturers of products according to Paragraph 2 shall be eligible for application.
Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel environmental label,
- the federal state being home to the applicant's production site,

- Umweltbundesamt, (German Environment Agency) which after the signing of the contract receives all data and documents submitted in application for the Blue Angel in order to be able to further develop the Basic Award Criteria.

6 Use of the Environmental Label

The use of the environmental label by the applicant is governed by a contract on the use of the environmental label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the environmental label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until 31 December 2025.
They shall be extended by periods of one year each, unless terminated in writing by 31 March 2025 or 31 March of the respective year of extension.
After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organizations.

The Contract on the Use of the Environmental Label shall specify:
- Applicant ({manufacturer}{manufacturer/distributor})
- Brand/trade name, product description
- Distributor (Label User), i.e. the marketing organization.

Anhang A Quoted laws and standards, literature

ADV 2020. ADV guidelines "Handlungsleitfaden zu Enteisungsabwasser. Umweltschonender Einsatz von Flächen- und Flugzeugenteisungsmittel" (De-icing material in waste water. Environmentally friendly use of movement area and aircraft de-icing agents). Version: January 2020

ADV 2017. Winterdienst an deutschen Verkehrsflughäfen. Hintergrundinformation des Flughafenverbandes ADV, (Winter maintenance at German commercial airports. Background information from the German Airports Association ADV) Version: January 2017

DIN 38405-27:1985-12 German standard methods for the examination of water, waste water and sludge; anions (Group D); determination of chloride ions (D 1)

DIN 38407-42:2011-03 Jointly determinable substances (Group F) - Part 42: Determination of selected polyfluorinated compounds (PFC) in water - Method using high performance liquid chromatography and mass spectrometric detection (HPLC/MS-MS) after solid-liquid extraction

DIN 38409-41:1998-12 German standard methods for the examination of water, waste water and sludge; summary action and material characteristic parameters (Group H); determination of the chemical oxygen demand (COD) in the range over 15 mg/l (H 41)

DIN EN ISO 6341:2013-01 Water quality - Determination of the inhibition of the mobility of Daphnia magna Straus (Cladocera, Crustacea) - Acute toxicity test (ISO 6341:2012); German version EN ISO 6341:2012

DIN EN ISO 6878:2004-09 Water quality - Determination of phosphorus - Ammonium molybdate spectrometric method (ISO 6878:2004); German version EN ISO 6878:2004

DIN EN ISO 7827:2013-03 Water quality - Evaluation of the "ready", "ultimate" aerobic biodegradability of organic compounds in an aqueous medium - Method by analysis of dissolved organic carbon (DOC) (ISO 7827:2010); German version EN ISO 7827:2012

DIN EN ISO 8692:2012-06 Water quality - Fresh water algal growth inhibition test with unicellular green algae (ISO 8692:2012); German version EN ISO 8692:2012

DIN EN ISO 9408:1999-12 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium by determination of oxygen demand in a closed respirometer (ISO 9408:1999); German version EN ISO 9408:1999

DIN EN ISO 9439:2000-10 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Carbon dioxide evolution test (ISO 9439:1999); German version EN ISO 9439:2000

DIN EN ISO 9888:1999-11 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Static test (Zahn-Wellens method) (ISO 9888:1999); German version EN ISO 9888:1999

DIN EN ISO 10304-1:2009-07 Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate (ISO 10304-1:2007); German version EN ISO 10304-1:2009

DIN EN ISO 10707:1998-03 Water quality - Evaluation in an aqueous medium of the "ultimate" aerobic biodegradability of organic compounds - Method by analysis of biochemical oxygen demand (closed bottle test) (ISO 10707:1994); German version EN ISO 10707:1997

ISO 10708:1997-02 Water quality - Evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic compounds - Determination of biochemical oxygen demand in a two-phase closed bottle test

DIN EN ISO 10712:2019-05 Water quality - Pseudomonas putida growth inhibition test (Pseudomonas cell multiplication inhibition test) (ISO 10712:1995); German version EN ISO 10712:1995
DIN EN ISO 11348-1:2009-05 Water quality - Determination of the inhibitory effect of water samples on the light emission of Vibrio fischeri (Luminescent bacteria test) - Part 1: Method using freshly prepared bacteria (ISO 11348-1:2007); German version EN ISO 11348-1:2008
DIN EN ISO 11348-2:2009-05 Water quality - Determination of the inhibitory effect of water samples on the light emission of Vibrio fischeri (Luminescent bacteria test) - Part 2: Method using liquid-dried bacteria (ISO 11348-2:2007); German version EN ISO 11348-2:2008
DIN EN ISO 11885:2009-09 Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885:2007); German version EN ISO 11885:2009
DIN EN 12260:2003-12 Water quality - Determination of nitrogen - Determination of bound nitrogen (TNb), following oxidation to nitrogen oxides; German version EN 12260:2003
DIN EN ISO 12846:2012-08 Water quality - Determination of mercury - Method using atomic absorption spectrometry (AAS) with and without enrichment (ISO 12846:2012); German version EN ISO 12846:2012
DIN EN ISO 14593:2005-09 Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Method by analysis of inorganic carbon in sealed vessels (CO_2 headspace test) (ISO 14593:1999); German version EN ISO 14593:2005
DIN EN ISO 15088:2009-06 Water quality - Determination of the acute toxicity of waste water to zebrafish eggs (Danio rerio) (ISO 15088:2007); German version EN ISO 15088:2008
DIN ISO 15705:2003-01 Water quality - Determination of the chemical oxygen demand index (ST-COD) - Small-scale sealed tube method (ISO 15705:2002)
DIN EN 16169:2012-11 Sludge, treated biowaste and soil - Determination of Kjeldahl nitrogen; German version EN 16169:2012
DIN EN ISO/IEC 17025:2018-03 General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2017); German and English version EN ISO/IEC 17025:2017
DIN EN ISO 17294-2:2017-01 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (ISO 17294-2:2016); German version EN ISO 17294-2:2016
DIN EN ISO 17852:2008-04 Water quality - Determination of mercury - Method using atomic fluorescence spectrometry (ISO 17852:2006); German version EN ISO 17852:2008
OECD No. 201 (2011) Freshwater Alga and Cyanobacteria, Growth Inhibition Test
OECD No. 202 (2004) Daphnia sp. Acute Immobilisation Test
OECD No. 203 (2019) Fish, Acute Toxicity Test
OECD No. 236 (2013) Fish Embryo Acute Toxicity (FET) Test
OECD No. 301 (1992) Ready Biodegradability
301 A: DOC Die-Away
301 B: CO2-Evolution (Modified Sturm Test)
301 C: MITI (I) (Ministry of International Trade and Industry, Japan)
301 D: Closed Bottle
301 E: Modified OECD Screening
301 F: Manometric Respirometry
OECD No. 302 B (1992) Zahn-Wellens / EMPA Test
OECD No. 310 (2006) Ready Biodegradability - CO2 in sealed vessels (Headspace Test)

SAE AMS 1435D:2018-11-02 Liquid Runway Deicing/Anti-Icing Products
SAE AMS 1431E:2018-10-24 Solid Runway Deicing/Anti-Icing Product
SAE AIR 6170A:2017-02-21 Ice Melting Test Method for Runways and Taxiways Deicing/Anti-icing Chemicals

Council Regulation (EG) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
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, as well as amending Regulation (EC) No. 1907/2006 (CLP Regulation)
Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.