



## Basic Criteria for Award of the Environmental Label

### Low-Pollutant Paints and Varnishes

**RAL-UZ 12a**



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## 1 Introduction

1.1 In co-operation with the Federal Minister for the Environment, Nature Conservation and Nuclear Safety, the Federal Environmental Agency and considering the results of expert hearings conducted by RAL the Environmental Label Jury has set up these Basic Criteria for Award of the Environmental Label. RAL, reg. assoc., has been entrusted with the award of the Environmental Label.

Upon application to RAL and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL the permission to use the Environmental Label may be granted for all products, provided that they comply with the requirements as specified hereinafter.

1.2 The use of low-solvent paints and varnishes does not only help to reduce the release of organic solvents into the atmosphere but also the concentrations of indoor air pollutants. For further reduction of solvents in certain fields of application the water-based coating systems have been subdivided into 4 groups of different maximum organic solvent contents (2-10 weight percent) and one group of high-solids solvent-based coatings (high-solids paints).

In many cases the changeover to water-based paint systems requires the addition of further additives, such as for example, preservatives and tensides. This had prompted the German Umweltbundesamt (Federal Environmental Agency) to include - apart from the adaptations to the revised legislation on hazardous substances - new rules for preservatives into these Award Criteria for "low-pollutant varnishes".

In 1980, the Environmental Label for "Low-Pollutant Paints and Varnishes" had been the first eco-label for a complex chemical product. The first fundamental revision of these Award Criteria in 1986 lowered the maximum permissible organic solvents content of "low-pollutant paints and varnishes" to 10 weight per cent. From 1980 until 1993 this eco-label helped to increase the share of "low-pollutant paints and varnishes" from 1% to 30%.

When differentiating between commercial and private users the share of do-it-yourselfers using low-pollutant paints and varnishes is even 70 per cent.

## 2 Scope

These Award Criteria apply to paints and varnishes and comparable coating materials with paint properties for interior and exterior use as house paints as well as for industrial coating. The criteria characterizing the paint properties are formulation, processing properties and imperviousness\* of a thoroughly dry paint surface.

**Included are** (cf. para. 3.2.1):

- primers, undercoats, clear and coloured paints and varnishes;

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\* The imperviousness of a thoroughly dry surface is measured by use of the Gilsonite test.



- thin and thick-layer glazes;
- water-based and high-solids paints.

**Excluded are:**

- wood preservatives and chemical wood preservative glazes containing biocides (see para. 3.2.3);
- pickling solutions;
- surfacers,
- waxes;
- synthetic resin emulsion paints\*;
- printing inks;
- other coating materials with no paint and varnish properties.

### **3 Requirements**

The Environmental Label shown on page 1 may be used for the marking of paints and varnishes under paragraph 2, provided that they comply with the following requirements:

#### **3.1 General Requirements**

**3.1.1** Low-pollutant paints and varnishes must not contain any substances or preparations<sup>1</sup> which:

**3.1.1.1** are listed in Annex I to Directive 67/548/EEC<sup>2</sup> and exhibit the properties listed in Section 4, GefStoffV (Ordinance on Hazardous Substances)<sup>3</sup> as well as the following properties set out in more detail in Annex VI to Directive 67/548/EEC:

- very toxic (T+)
- toxic (T),

**3.1.1.2** are listed in Annex I to Directive 67/548/EEC<sup>2</sup> and exhibit the properties listed in Section 4, GefStoffV (Ordinance on Hazardous Substances)<sup>3</sup> as well as the following properties set out in more detail in Annex VI to Directive 67/548/EEC:

- carcinogenic (Carc.Cat 1, Carc.Cat. 2, Carc.Cat. 3),

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<sup>1</sup> Terms within the meaning of Section 3, Nos. 1-4, Publication of the Revised Version of the German Chemicals Act of 20 June 2002, last amended on 13 May 2004 (German Federal Law Gazette I, page 934)

<sup>2</sup> Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances; Official Journal of the European Communities (continuous publication) and published in: Series of documents of the Federal Institute for Occupational Safety and Health - Regulations RW 23, „List of Hazardous Substances and Preparations under Annex 1 to Directive 67/548/EEC“ as well as Regulations Rw 28: „Classification and Labelling Collection“ ([www.baua.de](http://www.baua.de)), each as amended.

<sup>3</sup> Gefahrstoffverordnung (Ordinance on Hazardous Substances) of 23 December 2004 (Federal Law Gazette I, page 3758), last amended by Ordinance of 23 December 2004 (Federal Law Gazette I, page S.3854)



- mutagenic (Mut.Cat.1, Mut.Cat.2, Mut.Cat.3),
- reprotoxic (Repr.Cat 1, Repr.Cat 2, Rep.Cat. 3);

**3.1.1.3** are classified in TRGS 905<sup>4</sup> as

- carcinogenic (K1, K2, K3),
- mutagenic (M1, M2, M3),
- reprotoxic (R<sub>F1</sub>, R<sub>F2</sub>, R<sub>F3</sub>),
- teratogenic (R<sub>E1</sub>, R<sub>E2</sub>, R<sub>E3</sub>);

**3.1.1.4** are classified the MAK Value List<sup>5</sup> as:

- carcinogenic, category 1, category 2, category 3A or 3B,
- germ-cell mutagenic, category 1, category 2, category 3A or 3B,
- teratogenic in the column „pregnancy“ in group A or group B;

**3.1.1.5** are classified in „Verwaltungsvorschrift wassergefährdender Stoffe“ (Administrative Regulation on the Classification of Substances Hazardous to Waters)<sup>6</sup> as amended, in Water Hazard Class 3;

**3.1.1.6** or which according to scientific knowledge must be classified in one of the categories under paras. 3.1.1.1 to 3.1.1.3 either as carcinogenic, teratogenic or mutagenic or have other chronically damaging properties or which as such or as their impurities or decomposition products are apt to cause considerable risk or considerable disadvantage for the public.

#### **3.1.1.7 Exceptions**

- production-related/raw-material-related impurities of substances under paras. 3.1.1.1 and 3.1.1.2, 3.1.1.3 and 3.1.1.4 of the respective categories 1 and 2 must not exceed 0.01 weight percent in the individual intermediate and are classified as Class I Organic Substances provided that these are volatile organic substances.<sup>7</sup>

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<sup>4</sup> TRGS 905, List of carcinogenic, mutagenic or reprotoxic substances, as amended.

<sup>5</sup> Maximum Concentrations and Biological Tolerance Values at the Workplace, Deutsche Forschungsgemeinschaft (German Society for the Advancement of Scientific Research) Senate Commission for the Testing of Health-Endangering Working Materials, Wiley-VCH, Weinheim, as amended

<sup>6</sup> General Administrative Regulations pertaining to the Water Management Act on the Classification of Substances Hazardous to Waters into Water Hazard Classes (Administrative Regulation on the Classification of Substances Hazardous to Water - VwVwS) of 17 May 1999 (Federal Bulletin of 29 May 1999, No. 98a) and Recommendations of the Commission for the Evaluation of Substances Hazardous to Waters (KBwS) for Water Hazard Classes (WGK), cf. [www.umweltbundesamt.de/wgk.htm](http://www.umweltbundesamt.de/wgk.htm)

<sup>7</sup> Classification of organic substances according to the regulations of No. 3.1.7 TA-Luft (Technical Instructions on Air Quality Control, Umweltbundesamt (Federal Environmental Agency), Texts 33/97, Berlin, 1997



- production-related/raw-material-related impurities of substances under paras. 3.1.1.1 and 3.1.1.2, 3.1.1.3 and 3.1.1.4 of the respective category 3 as well as 3.1.1.5 must not exceed 0.01 weight percent in the individual intermediate and are classified as Class I Organic Substances provided that these are volatile organic substances.<sup>7</sup>
- Notwithstanding paras. 3.1.1.4 and 3.1.1.5 substances with a low action relevance may, in duly substantiated exceptional cases, be contained in the paint if it can be proved that, when properly processed, these substances won't be released or emitted from a thoroughly dry paint film (cf. para. 3.2.9)\*\*.
- with respect to preservatives and formaldehyde see also paras. 3.2.3 and 3.2.4. Notwithstanding this, carcinogenic, mutagenic and reprotoxic substances shall be minimized in line with the latest technological findings.

**3.1.2** Substances or preparations listed in Annex I to Directive 67/548/EEC and bearing at least one indication of danger mentioned in Section 4, GefStoffV (Ordinance on Hazardous Substances) and set out in detail in Annex VI to Directive 67/548/EEC, may be contained in low-pollutant paints and varnishes only up to the concentration limits which would make sure that the substance or preparation need not - according to Directive 1999/45/EC<sup>8</sup> - be classified as:

**3.1.2.1** as irritant and assigned the symbol „Xi“ as well as the indication of danger „irritant“ and/or the following risk phrases:

- R 41 (risk of serious damage to eyes),
- R 36,37,38 (irritating to eyes, respiratory system and skin)

or

**3.1.2.2** as dangerous for the environment and assigned the symbol N as well as the indication of danger “dangerous for the environment“ and/or the following Risk Phrases:

- R 52 (Harmful to aquatic organisms),
- R 53 (May cause long-term adverse effects in the aquatic environment).

**3.1.3** In addition, substances or preparations listed in Annex I to Directive 67/548/EEC and bearing at least one indication of danger mentioned in Section 4, GefStoffV (Ordinance on Hazardous Substances) and set out in detail in Annex VI to Directive 67/548/EEC may be contained in the finished product only up to 40 % of those limiting concentrations (< = 40 weight percent) in the respective paints, which according to Directive 1999/45/EG would result in one of the following classifications:

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<sup>\*\*</sup> Exceptional cases are determined by the German Umweltbundesamt (Federal Environmental Agency)

<sup>8</sup> Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (Official Journal of the European Communities), L 200, page 1



- 3.1.3.1 as harmful and assigned the symbol Xn and the indication of danger „harmful“;  
3.1.3.2 as corrosive and assigned the symbol C and the indication of danger „corrosive“.

## 3.2 Special Requirements

### 3.2.1 Volatile Organic Compounds (VOC)

The following limits apply to the maximum permissible content of volatile organic compounds (VOC) in the products:

	<b>Solids Content</b>	<b>maximum VOC Content</b>
<b>Group I</b> e.g. penetrating stoppers, penetrating primers	< 20 %	2 wgt. %
<b>Group II</b> e.g. undercoats, clear paints, parquet floor varnishes, floor coating materials, general purpose primers	≥ 20 %	8 wgt. %
<b>Group III</b> wood glazes with a solids content	< 30 %	8 wgt. %
wood glazes with a solids content	≥ 30 %	10 wgt. %
<b>Group IV</b> e.g. white and coloured paints and varnishes	> 40 %	10 wgt. %
<b>Group V</b> high-solids paints and varnishes with a solids content	≥ 85 %	15 wgt. %

Apart from that,

- Class I organic substances<sup>7</sup> may be contained up to 0.5 weight percent in the product.
- Class II organic substances<sup>7</sup> may be contained up to 2 weight percent in the products of group I and up to 5 weight percent in the products listed in groups II to V.

If due to lacking data the product contains non-classifiable organic substances these shall be grouped in Class I for precautionary reasons.

### 3.2.2 Residual Monomers

Provided that they are not specified, residual monomers in binders must not exceed 0.05 weight percent. In terms of these Award Criteria they are classed with “Class I organic substances”<sup>7</sup>.



### **Compliance Verifications (3.1.1 – 3.2.2)**

*The applicant shall submit the completed Annex 2 (formulation) to the Contract pursuant to RAL-UZ 12a. If application is made for different colour shades of the product the applicant shall submit not only the formulation of the base paint (Annex 2) but also the formulations of the different colour shades (Annex 3).*

*In addition to this, the applicant shall submit German and English versions of the Material Safety Data Sheets according to EC Directive 91/155/EEC<sup>9</sup> for his/her product as well as for all components listed in the formulation(s).*

### **3.2.3 Preservation (contrary to paras. 3.1.1.1 and 3.1.1.5)**

The paints and varnishes must not include any biocides except for microbicides used as container or film preservatives with the contents listed below. With respect to these active substances the following shall apply:

- a) The acute toxicity value of the microbicidal substance LC50 on fish and EC50 on daphnia must not be less than 0.1 mg/l (OECD 203 EC C.1 or OECD 202 Part I, EC C.2)

or

the NOEC value on fish and daphnia must not be less than 0.001 mg/l (OECD 202 Part 2)

- b) Microbicidal active substances with an acute toxicity LC50 and EC50 between > 0.1 mg/l and 1 mg/l or a NOEC value between > 0.001 mg/l and 0.01 mg/l may be used in the paint in concentrations of up to 0.01 weight percent.

With respect to the corresponding preservative *preparations* the following shall apply:

- a) the active substance concentration in the paint must not exceed a content of 0.5% of the labelling limit (Xn).

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<sup>9</sup> Commission Directive 91/155/EEC of 5 March 1991 defining and laying down the detailed arrangements for the system of specific information relating to dangerous preparations in implementation of Article 10 of Council Directive 88/379 EEC



- b) In addition to this, the minimum quantity of preservative preparations for in-can preservation shall be determined by means of germ injection (biotest) (cf. Annex 2 to the Award Criteria RAL-UZ 12a). This value must not be exceeded in the paint.

No such biotest shall be required for the preservation of the coating film.

Notwithstanding this, the minimum quantity for the respective field of application shall be permissible. Reference is made to para. 3.2.9.

**Compliance Verification**

*In addition to the paint formulation (Annex 2), the applicant shall, in the case of in-can preservation, submit the results of a biotest according to Annex 2 to the Award Criteria RAL-UZ 12a. In doing so, the applicant should bear in mind that only those preservative preparations may be used for the active substances of which the Umweltbundesamt - UBA (German Environmental Agency) has given a manufacturer-specific approval for use in low-pollutant paints and varnishes.*

**3.2.4 Formaldehyde (contrary to para. 3.1.1.1)**

The free formaldehyde content shall not exceed 10 mg/kg. Formaldehyde-releasing compounds may only be added in such quantity as will ensure that the resulting total content of free formaldehyde will not exceed 10 mg/kg.

**Compliance Verification**

*The applicant shall submit the results of a double determination of the free formaldehyde content according to the Method described in Annex 3 to the RAL-UZ 12a Award Criteria. Applications for different colour shades shall include such verification for the shades „colourless“ or „white“ as well as for two colour shades.*

**3.2.5 Pigments and Siccatives (Driers)**

The paints shall not be pigmented or siccated with pigments and siccatives based on lead, cadmium, chromium VI and their compounds.

Excluded are natural or production-related impurities of up to 0.01 weight percent (100 ppm) - the limit for lead is 0.02 weight percent (200 ppm) - which may be contained in the raw material.

**Compliance Verification**

*The applicant shall confirm compliance with the requirement by submitting Annex 2 to the Contract pursuant to RAL-UZ 12a (paint formulation).*



### **3.2.6 Baking Paints**

In terms of these Award Criteria the binder emissions stemming from baking paints are classed with „Class I organic substances“<sup>7</sup> , unless it can be proved that the action of the substances emitted is less relevant.

#### ***Compliance Verification***

*The applicant shall present additional data on the extent of binder emissions or solids losses.*

### **3.2.7 Serviceability**

The paints and varnishes shall meet the usual quality standards as regards the serviceability of the corresponding product groups (e.g. adhesion, hardness, drying properties, light-fastness, elasticity and, if applicable, opacity and surface durability against household chemicals according to current DIN Standards).

#### ***Compliance Verification***

*The applicant shall confirm compliance with the requirement by submitting Annex 1.*

### **3.2.8 Advertising Messages**

- The paint system pursuant para. 3.2.1, Groups I to V, shall be named on the container, in technical data sheets and other advertising brochures in connection with the product designation. The binder base shall also be indicated therein.
- Advertising messages which are apt to confuse the paint with other coating systems and product designations including terms like "bio", "eco", "nature", "wood preservation", "fung", "insect" and the like shall not be permissible.
- Advertising messages shall not include any statements which within the meaning of Article 23, para.4, Directive 67/548/EEC would play down the risks, such as, for example, "non toxic" "not harmful to health", as well as "free from ..." or similar wording.

#### ***Compliance Verification***

*The applicant shall confirm compliance with the requirement by submitting Annex 1 as well as the corresponding Technical Data Sheet and the container text.*



### 3.2.9 Cautionary Notes

Container texts and technical data sheets shall include the following easy-to-read instructions (similar wording shall be permissible):

- "Keep out of the reach of children"
- "Do not breathe spray mist"
- "Ensure proper ventilation during and after application"
- "In case of contact with eyes or skin, rinse immediately with plenty of water"
- "Do not allow to enter sewers, watercourses or soil"
- "Clean equipment with soap and water immediately after use " (applies only to water-based products of groups I to IV)
- "Only empty containers may be offered for recycling"
- "Give liquid remainders to collection sites for old paints and varnishes".

If film preservation is applied in accordance with para. 3.2.3 the following note shall additionally appear on the container:

- "Coating material for exterior applications only."

and, if applicable,: "including the interior surfaces of windows and exterior doors".

The ingredients of the paints shall be listed on the technical data sheets in accordance with the "Directive on the Declaration of Ingredients of House Paints and Varnishes and Related Products"<sup>10</sup> . The information must at least meet the requirements of VdL Directive, VdL-RL 01, edition of May 1996.

#### **Compliance Verification**

*The applicant shall declare compliance with this requirement by submitting Annex 1 and present the corresponding technical data sheet as well as the container text.*

**3.2.10** The applicant shall report annual production/sales figures of low-pollutant paints and varnishes to:

*RAL*

*Deutsches Institut für Gütesicherung und Kennzeichnung e. V.*

*Siegburger Str. 39*

*53757 Sankt Augustin*

#### **Compliance Verification**

*The applicant shall declare compliance with this requirement.*

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<sup>10</sup> Directive on the Declaration of Ingredients of House Paints and Varnishes and Related Products. VdL-RL 01/ 3. revised version of June 2004; published by: Verband der Lackindustrie e.V., Frankfurt/M., 2000, Annex 4 to the Award Criteria RAL-UZ 12a.



#### **4 Applicants and Parties Involved**

**4.1** Manufacturers of paints and varnishes shall be eligible for application.

**4.2** The following parties are involved in the award procedure:

RAL and the Federal State where the production plant is located that manufactures the products to be marked with the Environmental Label.

#### **5 Use of the Environmental Label**

**5.1** The terms governing the use of the Environmental Label by the applicant are stipulated by a Contract on the Use of the Environmental Label to be concluded with RAL.

**5.2** Within the scope of such contract the applicant undertakes to comply with the requirements under paragraph 3 as long as he/she makes use of the Environmental Label.

**5.3** Contracts on the Use of the Environmental Label are concluded to fix the terms for the labelling of products under paragraph 2.

Such contracts shall run until December 31, 2008. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2008 or March 31 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.

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

**5.5** The Contract on the Use of the Environmental Label shall give the following particulars:

**5.5.1** Applicant (Manufacturer)

**5.5.2** Brand/trade name

**5.5.3** Distributor (label user), i.e. the marketing organization pursuant to para. 5.4.



## **Annex 1 to the Basic Criteria for Award of Environmental Label RAL-UZ 12a**

- 1) Terms within the meaning of Section 3, Nos. 1-4, Publication of the Revised Version of the German Chemicals Act of 20 June 2002, last amended on 13 May 2004 (German Federal Law Gazette I, page 934)
- 2) Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances; Official Journal of the European Communities (continuous publication) and published in: Series of documents of the Federal Institute for Occupational Safety and Health - Regulations RW 23, „List of Hazardous Substances and Preparations under Annex 1 to Directive 67/548/EEC” as well as Regulations Rw 28: „Classification and Labelling Collection“ ([www.baua.de](http://www.baua.de))
- 3) Gefahrstoffverordnung (Ordinance on Hazardous Substances) of 23 December 2004 (Federal Law Gazette I, page 3758), last amended on 23 December 2004 (Federal Law Gazette I, page S.3855)
- 4) TRGS 905, List of carcinogenic, mutagenic or reprotoxic substances (edition of March 2002, last amended: BarbBl. (Federal Labour Gazette), September 2003)
- 5) Maximum Concentrations and Biological Tolerance Values at the Workplace, Deutsche Forschungsgemeinschaft (German Society for the Advancement of Scientific Research) Senate Commission for the Testing of Health-Endangering Working Materials, Wiley-VCH, Weinheim, current Communication No. 40 (2004) or as amended
- 6) General Administrative Regulations pertaining to the Water Management Act on the Classification of Substances Hazardous to Waters into Water Hazard Classes (Administrative Regulation on the Classification of Substances Hazardous to Water - VwVwS) of 17 May 1999 (Federal Bulletin of 29 May 1999, No. 98a) and Recommendations of the Commission for the Evaluation of Substances Hazardous to Water (KBwS) for Water Hazard Classes (WGK), cf. [www.umweltbundesamt.de/wgk.htm](http://www.umweltbundesamt.de/wgk.htm)
- 7) Classification of organic substances according to the regulations of No. 3.1.7 TA-Luft (Technical Instructions on Air Quality Control), Umweltbundesamt (Federal Environmental Agency), Texts 33/97, Berlin, 1997
- 8) Directive 1999/45/EC of the European Parliament and the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (Official Journal of the European Communities), L 200, page 1



- 9) Commission Directive 91/155/EEC of 5 March 1991 defining and laying down the detailed arrangements for the system of specific information relating to dangerous preparations in implementation of Article 10 of Council Directive 88/379 EEC
- 10) Directive on the Declaration of Ingredients of House Paints and Varnishes and Related Products. VdL-RL 01/ 3. revised version of June 2004; published by: Verband der Lackindustrie e.V., Frankfurt/M., 2000, Annex 4 to the Award Criteria RAL-UZ 12a.



## Annex 2 to the Award Criteria RAL-UZ 12a „Low-Pollutant Paints and Varnishes“

### **Conduct of a Biotest**

The applicant shall conduct a biotest using the following method to determine the minimum quantity of preservative preparation:

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#### **June 2003**

Laboratory method for the determination of the required preservative concentration in low-pollutant paints and varnishes.

#### **1. Scope**

The method can be used to test the effectiveness of preservatives in preventing growth and survival of damaging organisms in aqueous polymer-based low-pollutant paints and varnishes.

This method is applied analogously with the adoption of preservatives into Annex 1 to the Award Criteria RAL-UZ 102 “Low-emission Wall Paints”.

#### **2. Health Note**

Before starting on any test make sure that the national public health regulations and EC Directive 90/679/EEC on the ‘Protection of Workers from Risks related to Exposure to Biological Agents at Work’ are complied with. When using and handling emulsion paints and varnishes as well as biocides the recommendations in the corresponding Material Safety Data Sheets and product information brochures for safe product use and handling should be followed.

#### **3. Instruments and Nutrient Media**

Suitable sterile screw cap bottles (100ml);  
Sterile measuring pipettes, nominal volume 1.0 ml and 5.0 ml (according to DIN 12687);

Sterile glass or plastic petri dishes, diameter 90 or 100 mm;

Sterile diluent; e.g. distilled water (for agar) pursuant to ISO 3696,

Physiological saline (to rinse and dilute bacterial cultures);

Scales;

Pipette and 0.1 cm<sup>3</sup> sterile tips;

Bunsen burner;

Incubator, thermostatically controlled (30 +/-2°C);

Autoclave;

Sterile inoculating loops or needles;

Sterile spatulas;

Water bath or thermostat;

Sterile nutrient media for the corresponding micro-organisms

Composition and production (see Annex 1 A);

pH meter;

Bacterial stock cultures;

Culture tubes;



#### 4. Test Organisms

The following bacteria should be used for the bacterial load test:

Bacteria:

Alcaligenes faecalis	DSM 6174	or	ATCC 35655
Escherichia coli	DSM 787	or	ATCC 11229
Pseudomonas aeruginosa	DSM 939	or	ATCC 15442
Pseudomonas putida	DSM 291 <sup>T</sup>	or	ATCC 12633
Pseudomonas stutzeri	DSM 5190 <sup>T</sup>	or	ATCC 17588

Other bacteria of practical relevance or bacteria that continuously lead to infections may be used in the inoculation suspension.

#### 5. Method

##### 5.1 Inoculation Suspension - Preparation

Prepare separate suspensions of each bacterium by wetting the grown surface of the agar slant cultures following a 24 or 48 hour incubation at 30 +/- 2°C with the sterile diluent, e.g. distilled water (for agar) or physiological saline (to rinse and dilute bacterial cultures) and carefully wash off the plant cover with a sterile inoculating loop.

5.1.1 Determine the number of organisms in each suspension using a haemocytometer or determine the microbial content by another appropriate method. (e.g. Koch's pour plate method, ISO 7218 or Miles and Misra Method).

5.1.2 The cell count of the individual bacteria suspensions should be

$$10^8-10^9 \text{ CFU/cm}^3.$$

The prepared inoculation suspension must be used the same day and should be kept in the refrigerator until used.

5.1.3. In order to prepare a mixed suspension identical volumes of each bacterial suspension are added together and mixed.  
The cell count shall also be

$$10^8 - 10^9 \text{ CFU/cm}^3.$$



## 5.2 Bacterial Load Test

**5.2.1** Weigh suitable portions (e.g. 50 or 100g) of the emulsion paint or varnish into sterile screw cap bottles.

**5.2.2** Add the preservative in appropriate concentration series.

**5.2.3** Two non-preserved samples shall serve as control samples. One sample is inoculated (positive control) while the other one remains uninoculated (negative control = retained sample).

**5.2.4** Inoculate each sample (except for the negative control) with the same volume of mixed suspension equivalent to 1.0 percent of the sample weight.

Mix the sample well with a sterile spatula and, finally, screw the cap onto the bottle.

**5.2.5** Determine the microbial initial load of the inoculated non-preserved sample. For this purpose, streak a sample on an agar plate (see Annex 1B). Then incubate the plate at 30 +/- 2°C for no more than 3 days. Finally, determine the cell count (using an appropriate method).

**5.2.6** Incubate the preserved samples at 30 +/- 2°C for a period of 7 days.

**5.2.7** Determine the death rate of microbial contamination in the preserved samples. For this purpose, streak samples on agar plates in accordance with Annex 1B. Determine the cell counts after incubating the plates at 30°C +/- 2°C for no more than 3 days.

**5.2.8** Evaluate the microbial growth on the nutrient agar plates using the following scale:

0	No growth
1	1-10 CFU
2	11-100 CFU
3	101-1.000 CFU
4	>1.000 CFU

**5.2.9** Repeat steps 5.2.4 to 5.2.8 at weekly intervals until 6 inoculation cycles have been completed.  
Infected samples should not be subjected to further inoculation cycles.

**5.2.10** To determine relative death rates by preservative concentrations additional streaks can be performed and evaluated, for example, after 1 and 3 days following the inoculation.



## Annex 1A

### Nutrient Medium

#### Nutrient Agar

Nutrient agar is a universal substrate for the cultivation of non-fastidious micro-organisms.

The substrate is in line with the recommendations of Section 35 „Lebensmittel- und Bedarfsgegenständegesetz“ (LMBG) (Food and Consumer Goods Act).

Typical composition	(g/L)
Meat extract 'Lab-Lemco'	1.0
Yeast extract	2.0
Peptone	5.0
Sodium chloride	5.0
Agar	15.0
pH	7.4 +/- 02

#### Preparation

28 g of nutrient agar shall be suspended in 1 L of diluent (e.g. distilled water), heated until fully dissolved and autoclaved for 15 minutes at 121°C.

#### Description

Nutrient agar is a base substrate for the sub-culturing of micro-organisms for strain maintenance or isolation preceding the biochemical or serological examination. Nutrient agar is used in a semi-solid state as agar plates or agar slants to keep control strains. Nutrient agar contains 1.5% of agar so that up to 10% of blood or other biological liquids may be added for the preparation of special substrates. Without any additives nutrient agar can be used for the cultivation of non-fastidious bacteria.

#### Storage and Durability of Dried Substrate

Storage:

- in tightly sealed original containers,
- shielded from light,
- at a temperature of about 25 °C  
Ready-to-use plates: at temperatures from 2 – 8 °C

Durability: see Label

## Annex 1B

### Preparation of Agar Plates

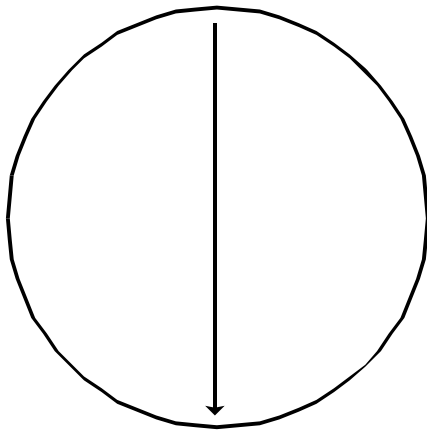
#### 1. Materials

Sterile 10 $\mu$ l inoculating loops  
Petri dishes with appropriate nutrient media (nutrient agar)  
Samples

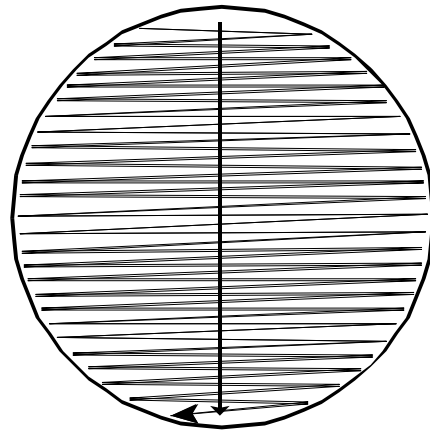
#### 2. Method

Sterile streak technique

- 2.1 After thoroughly mixing the sample immerse a 10 $\mu$ l inoculating loop into the sample.
- 2.2 Create a diagonal streak (a) across the substrate.
- 2.3 Use the same loop for additional streakings (b) in order to distribute the sample on the entire agar surface as uniformly as possible.



(a)



(b)

- 2.4 Make streakings of each sample.
- 2.5 Used inoculating loops are to be disposed of in compliance with current safety and environmental regulations.



## Annex 3 to the Award Criteria RAL-UZ 12a

### Method to determine the content of free formaldehyde in water-based paints and varnishes according to para. 3.2.4 of RAL-UZ 12a Award Criteria

#### 1 Introduction

During the manufacture of water-based paints and emulsion paints insignificant quantities of fungicidal/bactericidal substances are added to prevent decomposition of the pigment or mould formation in the container during storing. For this so-called in-can preservation formaldehyde-containing or formaldehyde-releasing compounds (formaldehyde releasers) are used among others.

The award procedure for the Environmental Label for low-pollutant paints and varnishes RAL-UZ 12a also includes the applicant's task to prove the content of free formaldehyde in water-based paint systems. This refers to the formaldehyde contained in the aqueous phase in contrast to the additional share of formaldehyde existing in a combined state when formaldehyde releasers are used. During the drying of the colour coating the "free" formaldehyde escapes along with the liquid phase into the room air. The limiting value as specified in RAL-UZ 12a shall make sure that the recommended maximum value of 0.1 ppm for formaldehyde in indoor areas is not exceeded during the processing and drying of the coating material.

The method described hereinafter can be used for the determination of the "free" formaldehyde content in addition to the "bound" formaldehyde in the formaldehyde releaser:

#### 2 The "Merckoquant-Method"

Under the brand name "Merckoquant" the company E. Merck AG, Darmstadt/Germany sells test strips for detection and semi-quantitative determination of formaldehyde in aqueous solutions. According to Merck the detection reaction is based on the condensation of aldehydes with 4-amino-3-hydrazino-5-mercapto-1,2,4-triazole during which, as a result of air oxidation, purple tetrazine derivatives come into being.

It is true that Merck calls this method "semi-quantitative" in its product descriptions but its indicative value is good enough to use it for testing whether or not a product observes or exceeds the indicated maximum permissible free formaldehyde. For this purpose, one should use the opportunity mentioned in the Instructions for Use



according to which the sensitivity of the method may be increased by extending the waiting period from immersing the test strip into the solution to comparing the colours from 1 to 2 minutes.

Serial tests showed that within the range between 10 and 20 ppm, i.e. after exceeding the limiting value, intermediate shades of colour become clearly visible.

If a test based on this method shows results around the limiting value which indicate an exceeding - even a slight one - the product must be subjected to tests as described under "5. Note" for final determination and clarification.

### **3 Conduct of the Test:**

#### **3.1 Determination of the Solids Content**

Since, however, the free formaldehyde only appears in the liquid phase and is determined therein the final determination of the free formaldehyde content requires the determination of the solids content of the water-based paint.

The solids content is determined according to DIN 53216 "Bestimmung der flüchtigen Anteile in Anstrichstoffen" (Determination of volatile matter of coating materials) at 105°C in the drying oven.

#### **3.2 Separation of the Liquid Phase in the Solid**

A certain quantity, e.g. 50g of the coating material to be examined, is diluted and well mixed with the same quantity of water. A portion of this mixture is centrifuged for two hours in a centrifuge at a minimum speed of 4.000 revolutions per minute. This usually results in a clean separation. By means of decanting the serum of the coating material is carefully separated from the deposit and used for the determination of formaldehyde

Low-speed centrifuges sometimes do not produce a clear serum, e.g. on products with a small pigment/extender portion. In such case, a centrifuge operating at 30.000 revolutions per minute is to be used for the separation of binder and solids.

#### **3.3 Determination of the Formaldehyde Content in the Aqueous Phase:**

Instruments and reagents required:

Merckoquant formaldehyde test kit, stopwatch

5 ml of the serum are pipetted off. 10 drops of the soda lye contained in the kit are added to these 5ml and carefully stirred.



Then a Merckoquant test strip is briefly immersed into the solution. After exactly 2 minutes the intensity of colouring is compared with the colour scale and the corresponding concentration is read off.

As a next step, the reading is divided by 2.

The resulting value gives the formaldehyde concentration (HCHO) in the solution in mg per litre.

#### 4 **Calculation of the Free Formaldehyde in Coating Materials:**

The following formula shall be applied. It considers the solids content as well as the quantity of water added to the starting product. The measured value for the formaldehyde content of the serum in mg/l is converted into mg of formaldehyde per kg of paint:

$$\frac{C_{\text{HCHO}} \cdot ((100 - \text{FK}) + W)}{100} = \text{mg of formaldehyde/kg of varnish}$$

HCHO = formaldehyde concentration in the serum in mg

FK = solids of the coating material in mass percent

W = Water added before centrifuging for sample dilution, in mass percent

#### 5 **Note**

Products rich in binders containing organic pigments, such as, for example, glazes, do not produce a clear serum, not even in high-speed centrifuges. As the tinting of the serum obscures the colouring of the test strip, an exact reading of the concentration value is rendered more difficult or even impossible. That is why this method shows, at the most, approaching values when applied to tinted sera.



Annex 4 to the Award Criteria

Verband der deutschen Lackindustrie e.V.  
Association of the German Paint Industry, reg. assoc.



**VdL-RL 01**  
(Third revised version)

**Richtlinie**  
**zur Deklaration von Inhaltsstoffen**  
**in Bautenlacken, Bautenfarben und**  
**verwandten Produkten**  
(Directive on the Declaration of Ingredients of House Paints  
and Varnishes and Related Products)

**„VdL-Richtlinie Bautenanstrichstoffe“**  
(VdL Directive on House Coatings)

Revised edition of June 2004

Verband der deutschen Lackindustrie e.V.  
(Association of the German Paint Industry, reg. assoc.)  
Karlstraße 21 60329 Frankfurt am Main



## **Preface**

This Directive was prepared by "Technischer Arbeitskreis Bautenanstrichstoffe" (TKB) (Working Group on House Coatings) of the Association of the German Paint Industry (VdL) to inform users of house paints and varnishes about the ingredients of specific product groups. It is to give the user of house paints and varnishes a better understanding of the products he or she uses.

## **1. Scope**

The scope of this directive is the declaration of ingredients of house paints and varnishes on the technical data sheet of the individual product. It may also be applied to the indication on labels or in other media, if applicable. An indication on the label of do-it-yourself- products for indoor wall applications is recommended for reasons of Responsible Care.

## **2. References to Technical Standards and Regulations**

- Directive 98/8/EC (April) concerning the placing of biocidal products on the market
- Directive 2004/42/EC (April 2004) on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle-refinishing products and amending Directive 1999/13/EC
- DIN EN 927-1 (October 1996) Paints and varnishes, Coating materials and coating systems for exterior wood - Part1: Classification and selection
- DIN EN 971-1 (September 1996) Paints and varnishes - Terms and definitions for coating materials - Part 1: General Terms
- DIN EN 1062 (August 2004) Paints and varnishes. Coating materials and coating systems for exterior masonry and concrete
- DIN EN 13 300 (November 2001) Water-borne coating materials and coating systems for interior walls and ceilings - Classification
- DIN 55 649 (March 2001) Determination of volatile organic compound content in water-based emulsion paints (in-can VOC).
- DIN 55 683 (November 1994) Determination of the solvents in coating materials containing organic solvents only



- DIN 55 945 (July 1999) Paints and varnishes - Terms and definitions for coating materials
- TRGS 900 Technical rules for hazardous substances - Limit Values in the Air at the workplace
- TRGS 905 List of substances that are carcinogenic, mutagenic or toxic to reproduction
- VdL Directive 03 (May 1997) Directive on the Determination of the Formaldehyde Concentration of Water-borne Emulsion Paints and Related Products
- VdL-Directive 11 (July 2004) Assessment Criteria for ecologically optimised ready-to-use house coatings in the do-it-yourself market

### 3. Terms, Definitions and Abbreviations

**Additive, Auxiliary, Admixture:** substance added in small quantities to a coating material to achieve, improve or modify one or more properties (DIN EN 971-1)

Additives according to this directive are for example: anti-sedimentation agents, antifoams, wetting agents, driers, thickeners, anti-skinning agents.

Solvents, plasticizers and preservatives shall not be considered as additives within the meaning of this directive.

**Alkyd resin paint:** coating material containing alkyd resins as characteristic binder. (DIN 55 945).

**Binder:** the non-volatile share of a coating material except for pigment and filler but including driers and other non-volatile auxiliaries. The binder binds the pigment particles with one another and with the substrate thereby forming with them the finished coating. Also, reactive volatile substances are binders as far as they become part of the coating by means of chemical reaction. Binders can be dissolved in organic solvents and/or dispersed in water (dispersion, emulsion).

*Examples of binders within the meaning of this directive are:*

*Aldehyde resins, alkyd resins, amino resins, chlorinated rubber, coumarone/indene resin,*

*Epoxy resin, epoxy ester, ketone resin, hydrocarbon resin, rosin (colophony), maleic resin, phenolic resin, polyacrylate resin, polyester resin, polyisocyanate, polysiloxane resin, polystyrene acrylate resin, polyurethane resin, polyvinyl acetal resin, polyvinyl acetate resin, polyvinyl ether, polyvinyl ester, silicone resin, drying vegetable oils (e.g. linseed oil, soybean oil and their derivatives*



(stand oil)), water glass, calcium hydroxide).

Binders in aqueous media may also be called by common names such as polyacrylate dispersion or silicone resin emulsion.

**Emulsion paint:** coating material in which the organic binder is dispersed in water. (DIN EN 971-1)

**Volatile organic compounds; VOC:** Organic compounds with a boiling point (or an initial boiling point) of up to 250°C under normal pressure conditions. (Decopaint Directive; (2004/42/EC)/Official Journal L5 of 9 January 1999) – except for reactive diluents.

**Filler:** Granular or powdered substance that is insoluble in the application medium and used in coating materials to achieve or influence certain physical properties. (DIN EN 971-1)

Examples of fillers within the meaning of this directive are:

Silicatic fillers (e.g. calcium silicate, mica, kaolin, silica glass, kieselguhr, silicic acid, sodium aluminium silicate, silica flour, silicium dioxide, silica sand, talc), other mineral fillers (e.g. aluminium hydroxide, blanc fixe, calcium carbonate, calcite, dolomite, calcspar, chalk, baryte), organic fillers (e.g. cellulose, wood fibres).

**Clear varnish:** A coating material which, when applied a substrate, forms a transparent coating with protective, decorative and/or specific technical properties. (DIN EN 971-1)

**Preservative:** An agent that is added to a coating material to protect it against attacks from microorganisms, such as for example bacteria, fungi, algae. Preservatives may be added to protect water-based coatings in the container (in-can preservation) or to protect coating films (film preservation).

*In-can preservatives within the meaning of this directive are listed under Product Type 6 in the Biocidal Products Directive 98/8/EC. Not all of them are suited for use in house coatings. Among the frequently used preservatives are isothiazolinone, formaldehyde-releasing compounds and iodopropynyl butyl carbamate (IPBC).*

Film preservatives within the meaning of this directive are listed under product type 7 of the Biocidal Products Directive 98/8/EC. Here too, not all of them are suited for use in house coatings. Among the frequently used film preservatives are triazine derivatives, iodopropynyl butyl carbamate (IPBC), dichlofluanid, tolylfluanid and propiconazole.

**Solvent:** A liquid of one or more components that is volatile under specified drying conditions and which is capable of dissolving the raw materials used in the product. (DIN EN 971-1)



Examples of solvents within the meaning of this directive are:

aliphates, alcohols, aromatics, esters, glycols, glycol ethers, ketones, terpene hydrocarbons, white spirits, and, if occasion arises, water.

**Pigment:** A substance, usually in the form of fine particles, that is practically insoluble in the medium and used because of its optical, protective or decorative properties. (DIN EN 971-1)

Examples of pigments within the meaning of this directive are:

inorganic pigments: white pigments (e.g. titanium dioxide, lithopone, zinc white), black pigments (e.g. carbon black, block iron oxide), coloured pigments (e.g. iron oxide and chromium oxide pigments), organic pigments, metallic pigments (e.g. aluminium), anti-corrosion pigments, magnetic pigments

**Product groups:** Within the meaning of this directive product groups are:

- acrylic resin paints
- alkyd resin paints
- alkyd resin paints, poor in aromatics
- alkyd resin paints, free from aromatics
- blue-stain resistant coating materials
- emulsion paints
- emulsion paints, Euroclass
- emulsion paints, solvent and plasticizer free
- emulsion varnishes
- emulsion silicate paints
- epoxy paints
- primers
- wood glazes (see DIN EN 927-1)
- limewashes
- clear varnishes
- pigment pastes (semi-finished product)
- polyurethane paints and varnishes
- silicone resin paints
- silicate resin paints
- thinners
- full-colour paints
- water-based paints

the words paints or varnishes may be replaced by primer, glaze, clear varnish, base paint, base varnish, coating (see DIN EN 1062; DIN EN 13 300)

As far as the name of the product group is based on the chemical designation it shall refer to the characteristic binder.



**Reactive diluent:** Viscosity-lowering substances which are chemically bound into the film during the drying or hardening of a coating material.

**Titanium dioxide (TiO<sub>2</sub>):** A white pigment increasing hiding power and whiteness in coating materials. The TiO<sub>2</sub> used in a product according to this directive must be manufactured in accordance with Council Directive on procedures for harmonising the programmes for the reduction and eventual elimination of pollution caused by waste from the titanium dioxide industry (92/112/EEEC) or its implementation into national law (in Germany this is 25th BImSchV - Federal Immission Control Ordinance on the control of emissions from the titanium dioxide industry of 8 November 1996)

**Thinner:** Liquid of one or more components which is volatile under specified drying conditions and added to a coating material to influence the product's properties, above all its viscosity (DIN EN 971-1). Within the meaning of this directive thinners are organic solvents and water.

**Film-forming agent:** Agent supporting the filming forming properties of the binder in water-based coatings. Solvents/VOC and/or plasticizers are used as film-forming agents.

**VOC:** Abbreviation standing for Volatile Organic Compound.

**Water-based paint:** General term for water-soluble coating materials. A water-based paint may contain organic solvents. The product may be partially or completely without water in its delivery condition (DIN 55 945).

**Plasticizer:** Substances with a boiling point over 250°C under normal pressure conditions which are added to a coating material to increase the elasticity of the coating (DIN EN 971-1).

Plasticizers also act as film-forming aids in emulsion paints.

Examples of plasticizers within the meaning of this directive are:

- Adipic acid esters (adipates)
- Alkyl sulfonic acid esters (C<sub>10</sub>-C<sub>20</sub>) of phenol and the methyl phenols
- Glutaric acid esters (glutarates)
- Maleic acid esters (maleates)

Plasticizers can be definitely distinguished at least by their chemical substance class name.



## 4. Requirements

### 4.1 General Requirements

The constituents of a product should be listed in the following order of raw materials groups:

1. Binders
2. Pigments and fillers
3. Solvents/thinners/plasticizers
4. Additives
5. Preservatives

In doing so, the constituents belonging to one group of raw materials shall be listed in the descending order of addition quantity without indicating the quantities. The terms listed under "Terms, Definitions and Abbreviations" shall be used wherever applicable.

*No substances or preparations shall be added to the products pursuant to the terms of this directive which contain the following heavy metals: cadmium, lead, chromium (VI), mercury, arsenic. They may, however, contain traces of natural or production-related impurities of the raw materials.*

*If the product contains preservatives for in-can preservation or film protection the container text must include a corresponding note. If isothiazolinone derivatives are used the note shall additionally include the following:*

*Persons allergic to isothiazolinone! Please call at: ....(manufacturer hotline where consumers can obtain additional information on preservation).*

### 4.2 Special Requirements

#### 4.2.1 Alkyd resin paints, low in aromatics

*contain mixtures of hydrocarbon in accordance with TRGS 900 Group 2. The aromatics content in the finished product is less than 15 weight percent - to be determined in accordance with DIN 55683.*

**4.2.2. Alkyd resin paints, free from aromatics** (as defined in TRGS 900) contain mixtures of hydrocarbon in accordance with TRGS 900 Group 1. The aromatics content in the finished product is less than 1 weight percent - to be determined in accordance with DIN 55683 .

#### 4.2.3. Emulsion paints, Euroclass

The properties of the coating material must conform with the DIN EN 13 300 standard.

The VOC content in the ready-to-use product must not exceed 25 g/l.



Apart from that, the product must not contain any environmentally hazardous plasticizers, as defined in Council Directive 67/548/EEC (Official Journal 196 of 16 August 1967, page 1), last amended by Commission Directive 2004/73/EC (Official Journal L 152 of 30 April 2004, page 1).

The content of volatile aromatic substances may not exceed 0.2% (m/m) of the product.

Components used as preservatives may contain substances classified as hazardous to the environment or toxic or highly toxic to humans only up to 0.1% of the total product.

#### **4.2.4. Emulsion paints, solvent and plasticizer free**

The properties must conform with the DIN EN 13 300 standard.

The VOC content and the plasticizer content may each not exceed 1 g/l. The VOC content shall be determined in accordance with DIN 55 649.

The following substances may not be added:

Substances which must be classified in Annex I to Directive 67/548/EEC as very toxic (T+), toxic (T), carcinogenic, mutagenic or reprotoxic;

Substances which in TRGS 905 or in the MAK value list, each as amended, are classified as

- a) carcinogenic according to EC Category Carc.Cat.1, Carc.Cat.2 or Carc.Cat.3 or according to MAK Classification K1, K2, or K3;
- b) mutagenic according to EC Category Mut.Cat.1, Mut.Cat.2 or Mut.Cat.3 or M1, M2 or M3
- c) reprotoxic according to EC Category Repr.Cat.1, Repr.Cat.2, Repr.Cat.3 or R<sub>E/F</sub>1, R<sub>E/F</sub>2 or R<sub>E/F</sub>3.

The following preparations may not be added:

Preparations that contain lead, cadmium or Chromium (VI) compounds as constituents. Excluded are process-related, technically unavoidable (natural or production-related) impurities of up to 0.01 weight percent (100 ppm), or with regard to lead 0.02 weight percent (200 ppm) which may be contained in the raw material.

The following substances may be used for in-can preservation:



#### 1. Formaldehyde

The following chemicals may be used as formaldehyde releasers:

N-Formals (e.g. methylol ureas, dimethylol dimethyl hydantoin, trimethylol allantoin),

O-Formals (e.g. phenylmethoxy methanol, 2,5-dioxahexane-1,6-diol).

The free formaldehyde content shall not exceed mg/kg.

Formaldehyde releasing compounds may only be added in quantities not to exceed a total free formaldehyde content of 10 mg/kg. Determination according to VdL Directive No. 03.

The free formaldehyde content may exceed 10 mg/kg if the indoor air emission of formaldehyde in a chamber test during processing does not exceed 0.25 ppm and is less than 0.05 ppm 24 h after starting the coating at the latest. This requirement shall be considered met if the in-can formaldehyde content measured according to VdL Directive No. 03 does not exceed 100 ppm.

2. Mixture of 5-chlor-2-methyl-4-isothiazolin-3-on/2-methyl-4-isothiazolin-3-on at a ratio of 3:1 in a concentration of no more than 50 ppm; a concentration of under 15 ppm is recommended.
3. Mixture of 2-methyl-2(H)-isothiazol-3-on/1,2-Benzisothiazol-3(2H)-on at a ratio of 1:1 with a concentration of no more than 200 ppm.
4. Silver chloride on suitable media in a concentration of no more than 100 ppm of silver chloride.
5. 3-iodo-2-propynyl butyl carbamate in a concentration of no more than 80 ppm.
6. 1,2-benzisothiazol-3(2H)-one in a concentration of no more than 200 ppm.

#### **4.2.5 Emulsion Paints bearing the Blue Angel Label**

Paints exclusively designed for interior wall and ceiling surfaces shall be eligible for the Blue Angel eco-label.

### **5. Labelling**

Products referring to this directive must meet its requirements in every respect.

For examples, see Annex.



## **6. User Information**

The Association of the German Paint Industry, reg. assoc (VdL) recommends the application of this VdL Directive to non-members too. As a prerequisite they are required to send a written statement to VdL affirming compliance with the directive. VdL reserves the right to verify all information contained in the statement as well as compliance with the directive. In the case of substantiated offences VdL shall be entitled to deny further reference to the VdL Directive and take legal action against misleading declarations.



## **Annex**

Examples of declarations according to this directive:

### **1. Emulsion Paint, Euroclass**

Composition:

Polystyrene acrylate emulsion, titanium dioxide, calcspar, silicates, water, glycol ether, additives, preservatives. Persons allergic to isothiazolinone, please call at:

.....

### **2. Emulsion paint, solvent and plasticizer free,**

Composition:

Polystyrene acrylate emulsion, titanium dioxide, calcspar, silicates, water, additives, preservatives. Persons allergic to isothiazolinone, please call at: .....

### **3. Emulsion varnish**

Composition:

Polyacrylate dispersion, titanium dioxide, calcspar, silicates, water, glycols additives, preservatives

### **4. Alkyd resin paints, low in aromatics**

Composition:

Alkyd resin, titanium dioxide, aliphates, aromatics, additives



**CONTRACT**

No.

*on the Award of the Environmental Label*

RAL, reg. assoc., as label awarding agency, and the firm of  
**(Distributor/Applicant)**  
as applicant, conclude the following Contract  
on the Use of the Environmental Label:

S P E C I M E N
-----------------

- Under the following conditions the applicant shall be entitled to use the Environmental Label for the labelling of the product / product group / project:  
**Low-pollutant Paints and Varnishes** for  
  
"**Brand/Trade Name**".  
  
This shall not include the right to use the Environmental Label as part of a brand.  
Unless otherwise agreed, the Environmental Label shall only be used in the above given shape and colour and shall be marked at the bottom "Jury Umweltzeichen" (Environmental Label Jury). The entire inner surrounding text shall always be identical as regards size, form, thickness and colour of the letters and it shall be easy to read.
- The Environmental Label according to para. 1 shall only be used for the above-mentioned product / product group / project.
- If the Environmental Label is used for advertising purposes the applicant shall make sure that it is exclusively used in connection with the above-named product / product group / project for which the use of the Environmental Label has been granted and settled under this contract. The applicant shall be solely responsible for the way the label is used, above all, in advertising.
- During the entire period of label use the product / product group / project to be labelled shall comply with all requirements and conditions for the use of the label as specified in the "Grundlage für Umweltzeichen-Vergabe **RAL-UZ 12a**" (Basic Criteria for Award of the Environmental Label **RAL-UZ 12a**), as amended. This shall also apply to the reproduction of the Environmental Label (including the surrounding text). Claims for damages against RAL, especially on the grounds of third party objections to the applicant's use of the label and the accompanying advertising shall be ruled out.
- If the "Basic Criteria for Award of the Environmental Label" provide for checks by third parties the applicant shall bear the costs accruing in connection therewith.
- Should the applicant himself or third parties find out that the applicant does not comply with the conditions as stipulated in paras. 2-5 he shall be liable to inform RAL and stop the use of the Environmental Label until the conditions are complied with again. Should the applicant be incapable of restoring the state required for the use of the label immediately or should the applicant seriously offend against this contract RAL may, if necessary, withdraw the Environmental Label and prohibit the applicant from using the label any longer. Claims for damages against RAL because of the withdrawal of the label shall be ruled out.
- The Contract on the Use of the Environmental Label may be terminated for good reason.  
Examples of good reasons are:  
- unpaid contributions  
- substantiated risk of injury and death.  
In such case, applicant's continued use of the Environmental Label shall be prohibited. The applicant shall not be entitled to bring a claim for damages against RAL (see above: paragraph 6, sentence 3).
- According to the Basic Criteria for Award of the Environmental Label **RAL-UZ 12a** this contract will run until **December 31, 2008**. It shall be extended by periods of one year each, unless terminated in writing by **March 31, 2008** or by March 31 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 the products being still in the market.
- Products / projects marked with the Environmental Label and the advertising for these products/ projects may reach the consumer only when naming the company of the  
**Applicant / Distributor.**

Sankt Augustin, this ... day of

200..

Place, Date

RAL e.V.

(Signature of authorized representative and  
company seal)



**Annex 1 to the Contract pursuant to RAL-UZ 12a  
Eco-label for „Low-Pollutant Paints and Varnishes“**

---

**Please use this  
form !**

Manufacturer (Applicant): .....

Distributor (label user): .....

Brand /Trade name: .....

Paint system (cf. para. 3.2.5): .....

Colour shades or gloss grades available: .....

Binder emission level:<sup>1)</sup> .....

For oven-dry coatings only:<sup>1)</sup> .....

or

Solids loss:<sup>1)</sup> .....

**Applicant's Statement**

It is hereby stated that

- the paint meets the usual quality requirements as regards the serviceability of the respective product group (e.g. adhesion, hardness, drying properties, light-fastness, elasticity and, if applicable, opacity and surface durability against household chemicals according to current DIN standards;
- the paint system pursuant para. 3.2.1, Groups I to V, is named on the container, in technical data sheets and other advertising brochures in connection with the product designation. The binder base is also indicated;
- advertising messages which are apt to confuse the paint with other coating systems and product designations including terms like "bio", "eco", "nature", "wood preservation", "fung", "insect" and the like are not used;
- advertising messages do not include any statements which within the meaning of Article 23, para.4, Directive 67/548/EEC would play down the risks, such as, for example, "non toxic" "not harmful to health", as well as "free from ..." or similar wording;



- container texts and technical data sheets include the following easy-to-read instructions (similar wording shall be permissible):
  - "Keep out of the reach of children"
  - "Do not breathe spray mist"
  - "Ensure proper ventilation during and after application"
  - "In case of contact with eyes or skin, rinse immediately with plenty of water."
  - "Do not allow to enter sewers, watercourses or soil"
  - "Clean equipment with soap and water immediately after use " (applies only to water-based products of groups I to IV)
  - "Only empty containers may be offered for recycling"
  - "Give liquid remainders to collection sites for old paints and varnishes".
  - and
    - provided that film preservation is applied in accordance with para. 3.2.3 the following instruction additionally appears on the container:
    - "Coating material for exterior applications only"
    - and, if applicable, "including the interior surfaces of windows and exterior doors".
- the ingredients of the paints are listed on the technical data sheets in accordance with the "Directive on the Declaration of Ingredients of House Paints and Varnishes and Related Products". The information meets at least the requirements of VdL Directive 01, edition of May 1996
- that the sales figures are annually reported to RAL.

The Bundesamt für Wehrtechnik und Beschaffung (Federal Office for Defense Technology and Procurement) has registered the product under Supply Reg. No.....<sup>2)</sup>

### **Annexes**

- Annex 2 to the contract pursuant to RAL-UZ 12a (paras. 3.1.1 – 3.2.2)
- Annex 3 to the contract pursuant to RAL-UZ 12a (paras. 3.1.1 – 3.2.2)
- Material Safety Data Sheets according to EC Directive 91/155/EEC
  - for the intermediates
  - for the ingredients
  - for the product applying for the eco-label
- formaldehyde content according to para. 3.2.4 of RAL-UZ 12a (Annex 3 to the Award Criteria)
  - Please use the applicable form (Annex 4 to the Contract pursuant to RAL-UZ 12a)
- Biotest according to para. 3.2.3 of RAL-UZ 12a (Annex 2 to the Award Criteria)
  - Please use the applicable form (Annex 5 to the Contract pursuant to RAL-UZ 12a)
- Technical Data Sheet and/or product description as well as
- container text

Place:

Applicant:

(signature of authorized representative  
and company stamp)

Date:

.....

1) Please delete what does not apply.

2) Products having a Supply Reg.No. are reported by the Federal Environmental Agency to the Bundesmaterialkatalogisierungszentrale (Central Federal Office for Material Registration). Its information system kept for various procurement offices of the Federal Government lists these products with a special mark indicating that they have been awarded the Environmental Label. The Environmental Label has no influence on the issuance of a Supply Reg. No.



**Annex 2 to the Contract pursuant to RAL-UZ 12a**

**Eco-label for „Low-Pollutant Paints and Varnishes“**

**Please use this  
form !**

(please report in weight percent of the paint)

**Paint Formulation** (Note regarding different shades: Form 1 shall be completed for the basic formulation only; Form 2 will do for the individual shades)

Product name: Date: Classification:

Colour shade: Code No., if applicable: UBA-No.A<sup>1)</sup>:

UBA-No.L<sup>1)</sup>:

Applicant: page: ..... of pages

Function	Trade name	Manufacturer	Chemical designation (acc. to IUPAC)	Solids content	Organic Solvents content <sup>3)</sup>	Water <sup>3)</sup>	Residual monomers <sup>3)</sup>	Quantity used in the paint <sup>3)</sup>	Labelling accord. to GefStoffV <sup>5)</sup>	TA Luft Class (for solvents)	WGK <sup>4)</sup>	UBA <sup>1)</sup>
Total:								100 %				

1) to be completed by UBA (Umweltbundesamt - Federal Environmental Agency).  
2) Possible alternatives may be additionally listed.  
3) Content in the paint (in weight percent).  
4) Water hazard class (cf. Material Safety Data Sheet).  
5) Symbol; labelling obligation under GefStoffV (Ordinance on Hazardous Substances) (cf. Material Safety Data Sheet)







**Annex 5 to the Contract pursuant to RAL-UZ 12a**  
**Eco-label for „Low-Pollutant Paints and Varnishes “**

**Please use this form !**

Biotest: .....

Test laboratory: .....

Person in charge of the test: .....

Date: .....

Description/declaration of the low-pollutant paint: .....

Test formulation of the paint: .....

Designation of the preservative preparation tested: .....

Results:	Inoculation cycles					
	1	2	3	4	4	6
Date:						
Check(s)						
1st. Concentration						
2nd Concentration						
3rd Concentration						
4th Concentration						
5th Concentration						
n. Concentration						

Caption:

Minimum preservative preparation quantity required: .....

Brief description of the test conditions (material and method): .....

Titre / ml: \_\_\_\_\_ Test organisms: \_\_\_\_\_ Temperature: \_\_\_\_\_



**To the  
Applicant**

**Check List**

**Application for Award of the Environmental Label according to RAL-UZ 12a  
for "Low-Pollutant Paints and Varnishes"**

Dear Madam,  
Dear Sir,

to make sure that your application for Award of the Environmental Label is processed without delay you are kindly requested to submit the following documents to RAL:

- Product-related informal application on the firm's letter-head paper indicating the federal state where applicant's factory is located that manufactures the product to be marked with the label;
- Annex 1 to the Contract pursuant to RAL-UZ 12a
- Annex 2 to the Contract pursuant to RAL-UZ 12a
- Annex 3 to the Contract pursuant to RAL-UZ 12a
- Annex 4 to the Contract pursuant to RAL-UZ 12a (formaldehyde determination)
- Annex 5 to the Contract pursuant to RAL-UZ 12a (biotest)
- Material Safety Data Sheets according to EC Directive 91/155/EEC
  - for the paint
  - for the intermediates
  - for the ingredients
  - for the product applying for the eco-label
- Technical Data Sheet and/or product description as well as container text
- Expected sales of the products to be marked with the Environmental Label during the year of application. This information is required only if, so far, no other contract on the Use of the Environmental Label according to RAL-UZ 12a has been concluded with RAL.