L.N. 349 of 2010

ENVIRONMENT PROTECTION ACT (CAP. 435)

Limitation of Emissions of Volatile Organic Compounds Regulations, 2010

BY VIRTUE of the powers conferred by articles 3, 9 and 28 of the Environment Protection Act, the Prime Minister has made the following regulations;-

Citation and commencement.

1. (1) The title of these regulations is the Limitation of Emissions of Volatile Organic Compounds Regulations, 2010.

(2) These regulations shall come into force on such date as the Minister responsible for the environment may by notice in the Gazette appoint, and different dates may be so appointed for different provisions and different purposes of these regulations.

(3) A notice under subregulation (2) of this regulation may make such transitional provisions as appear to the Minister responsible for the environment to be necessary or expedient in connection with the provisions thereby brought into force.

Interpretation and scope.

2. (1) For the purpose of these regulations and unless the context otherwise requires -

"adhesive" means any mixture, including all the organic solvents or mixtures containing organic solvents necessary for its proper application, which is used to adhere separate parts of a product;

"authorisation" means a written decision by which the competent authority grants a licence to operate all or part of an installation;

"average over 24 hours" means the arithmetic average of all valid readings taken during the 24-hour period of normal operation;

"competent authority" means the Malta Environment and Planning Authority and such other body or person as the Minister responsible for the environment may by order in the Gazette prescribe and different bodies or persons may be designated as a competent authority for different provisions and different purposes of these regulations;

"coating" means any mixture, including all the organic solvents or mixtures containing organic solvents necessary for its proper application, which is used to provide a decorative, protective or other functional effect on a surface;

"consumption" means the total input of organic solvents into an installation per calendar year, or any other 12-month period, less any VOCs that are recovered for reuse;

"contained conditions" means conditions under which an installation is operated such that the VOCs released from the activity are collected and discharged in a controlled way either via a stack or abatement equipment and are therefore not entirely fugitive;

"emission" means any discharge of volatile organic compounds from an installation into the environment;

"emission limit value" means the mass of volatile organic compounds, expressed in terms of certain specific parameters, concentration, percentage and, or level of an emission, calculated at standard conditions, N, which may not be exceeded during one or more periods of time;

"existing installation" means an installation in operation;

"fugitive emissions" means any emissions, not in waste gases, of volatile organic compounds into air, soil and water as well as, unless otherwise stated in Schedule III, solvents contained in any products. These include uncaptured emissions released to the outside environment via windows, doors, vents and similar openings;

"halogenated organic solvent" means an organic solvent which contains at least one atom of bromine, chlorine, fluorine or iodine per molecule;

"ink" means a mixture, including all the organic solvents or mixtures containing organic solvents necessary for its proper application, which is used in a printing activity to impress text or images on to a surface;

"input" means the quantity of organic solvents and their quantity in mixtures used when carrying out an activity, including the solvents recycled inside and outside the installation, and which are counted every time they are used to carry out the activity;

"installation" means a stationary technical unit where one or more activities falling within the scope defined in subregulation (2) of this regulation are carried out, and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions;

"mass flow" means the quantity of VOCs released, in unit of mass/hour;

"new installation" means an installation which came into operation after the date when these regulations came into force;

"nominal capacity" means the maximum mass input of organic solvents by an installation averaged over one day, if the installation is operated under conditions of normal operation at its design output;

"normal operation" means all periods of operation of an installation or activity except start-up and shut-down operations and maintenance of equipment;

"operator" means any physical or legal person who operates or controls the installation or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of the installation has been delegated;

"organic compound" means any compound containing at least the element carbon and one or more of hydrogen, halogens, oxygen, sulphur, phosphorus, silicon or nitrogen, with the exception of carbon oxides and inorganic carbonates and bicarbonates;

"organic solvent" means any VOC which is used alone or in combination with other agents, and without undergoing a chemical change, to dissolve raw materials, products or waste materials, or is used as a cleaning agent to dissolve contaminants, or as a dissolver, or as a dispersion medium, or as a viscosity adjuster, or as a surface tension adjuster, or a plasticiser, or as a preservative;

"mixture" means mixtures or solutions composed of two or more substances;

"registration" means a procedure, specified in a legal act, involving at least notification to the competent authority

by the operator of the intention to operate an installation or activity falling within the scope of these regulations;

"reuse of organic solvents" means the use of organic solvents recovered from an installation for any technical or commercial purpose and including use as a fuel but excluding the final disposal of such recovered organic solvent as waste;

"small installation" means an installation which falls within the lower threshold band of items 1, 3, 4, 5, 8, 10, 13, 16 or 17 of Schedule II or for the other activities of Schedule II which have a solvent consumption of less than 10 tonnes/ year;

"standard conditions" means a temperature of 273,15 K and a pressure of 101,3 kPa;

"start-up and shut-down operations" means operations whilst bringing an activity, an equipment item or a tank into or out of service or into or out of an idling state. Regularly oscillating activity phases are not to be considered as start-ups and shut-downs;

"substances" means any chemical element and its compounds, as they occur in the natural state or as produced by industry, whether in solid or liquid or gaseous form;

"substantial change" -

(a) for a small installation, means a change of the nominal capacity leading to an increase of emissions of volatile organic compounds of more than 25%. Any change that may have, in the opinion of the competent authority, significant negative effects on human health or the environment is also a substantial change;

(b) for all other installations, means a change of the nominal capacity leading to an increase of emissions of volatile organic compounds of more than 10%. Any change that may have, in the opinion of the competent authority, significant negative effects on human health or the environment is also a substantial change;

"total emissions" means the sum of fugitive emissions and emissions in waste gases;

"volatile organic compound" or "VOC" means any organic compound having at 293,15 K a vapour pressure of

0,01 kPa or more, or having a corresponding volatility under the particular conditions of use. For the purpose of these regulations, the fraction of creosote which exceeds this value of vapour pressure at 293,15 K shall be considered as a VOC;

"varnish" means a transparent coating;

"waste gases" means the final gaseous discharge containing volatile organic compounds or other pollutants, from a stack or abatement equipment into air. The volumetric flow rates shall be expressed in m^3/h at standard conditions.

(2) The purpose and scope of these regulations is to prevent or reduce the direct and indirect effects of emissions of volatile organic compounds into the environment, mainly into the air, and the potential risks to human health, by providing measures and procedures to be implemented for the activities defined in Schedule I, in so far as they are operated above the solvent consumption thresholds listed in Schedule II.

Obligations applying to new installations.

3. The competent authority shall ensure that:

(a) all new installations comply with regulations 5, 8 and 9;

(b) all new installations are registered or undergo authorisation before being put into operation.

Obligations applying to existing installations.

4. The competent authority shall ensure that:

(a) all existing installations comply with regulations 5, 8 and 9;

(b) all existing installations are registered or authorized;

(c) those installations to be authorised or registered using the reduction scheme of Schedule III are to notify this to the competent authority;

(d) where an installation -

(i) undergoes a substantial change, or

(ii) comes within the scope of these regulations for the first time following a substantial change, that part of the installation which undergoes the substantial change shall be treated either as a new installation or as

an existing installation, provided that the total emissions of the whole installation do not exceed those that would have resulted had the substantially changed part been treated as a new installation.

Requirements.

5. (1) The competent authority shall ensure, either by specification in the conditions of the authorisation or by general binding rules that subregulations (2) to (12) of this regulation are complied with.

(2) All installations shall either comply with:

(a) the emission limit values in waste gases and the fugitive emission values, or the total emission limit values, and other requirements laid down in Schedule II; or

(b) the requirements of the reduction scheme specified in Schedule III.

(3) (a) For fugitive emissions, the competent authority shall apply fugitive emission values to installations as an emission limit value:

Provided that where it is demonstrated to the satisfaction of the competent authority that for an individual installation this value is not technically and economically feasible, the competent authority can make an exception for such an individual installation provided that significant risks to human health or the environment are not to be expected. For each derogation, the operator shall demonstrate to the satisfaction of the competent authority that the best available technique is being used.

(b) The competent authority may exempt from the controls of Schedule II activities which cannot be operated under contained conditions, when this possibility is explicitly mentioned in that Schedule, provided that the reduction scheme of Schedule III is then to be used unless it is demonstrated to the satisfaction of the competent authority that this option is not technically and economically feasible. In this case, the operator shall demonstrate to the satisfaction of the competent authority that the best available technique is being used.

(4) The competent authority shall ensure that for installations not using the reduction scheme, any abatement equipment installed after the date on which these regulations are brought into effect shall meet all the requirements of Schedule II.

(5) The competent authority shall ensure that installations where two or more activities are carried out, each of which exceeds the thresholds in Schedule II, shall:

(a) as regards the substances specified in subregulations (6), (7) and (8) of this regulation, meet the requirements of those subregulations for each activity individually;

(b) as regards all other substances, either:

(i) meet the requirements of subregulation (2) for each activity individudally; or

(ii) have total emissions not exceeding those that would have resulted had subparagraph (i) been applied.

(6) The competent authority shall ensure that substances or mixtures which, because of their content of VOCs, are classified as carcinogens, mutagens, or toxic to reproduction, are assigned or need to carry the hazard statements H340, H350, H350i, H360D or H360F or the risk phrases R45, R46, R49, R60, R61, and shall be replaced, as far as possible, by taking into account the guidance as mentioned in subregulation (1) of regulation 7, by less harmful substances or mixtures within the shortest possible time.

(7) The competent authority shall ensure that for discharges of the VOCs referred to in subregulation (6) of this regulation, where the mass flow of the sum of the compounds causing the labeling referred to in that subregulation is greater than, or equal to 10 g/h, an emission limit value of 2 mg/Nm3 shall be complied with. The emission limit value refers to the mass sum of the individual compounds.

(8) The competent authority shall ensure that for discharges of halogenated VOCs which are assigned the risk phrase R40 or R68, where the mass flow of the sum of the compounds causing the labelling R40 or R68 is greater than, or equal to, 100 g/h, an emission limit value of 20 mg/Nm3 shall be complied with. The emission limit value refers to the mass sum of the individual compounds. The discharge of VOCs referred to in subregulations (6) and (8) of this regulation shall be controlled as emissions from an installation under contained conditions as far as technically and economically feasible to safeguard public health and the environment.

(9) The competent authority shall ensure that discharges of those VOCs which, after the entry into force of these

regulations, are assigned or need to carry one of the risk phrases mentioned in subregulations (6) and (8) of this regulation, shall have to comply with the emission limit values mentioned in subregulations (7) and (8) respectively, within the shortest possible time.

(10) All appropriate precautions shall be taken by the competent authority to minimize emissions during start-up and shut-down.

(11) Existing installations which operate existing abatement equipment and comply with the following emission limit values;

(a) 50 mg C/Nm3 in the case of incineration,

(b) 150 mg C/Nm3 in the case of any other abatement equipment,

shall be exempt from the waste gases emission limit values in the table in Schedule II until 31st March, 2013, provided the total emissions of the whole installation do not exceed those that would have resulted had all the requirements of the table been met.

(12) Neither the reduction scheme, nor the application of subregulation (11) of this regulation, nor regulation 6 shall exempt installations discharging substances specified in subregulations (6), (7) and (8) of this regulation from fulfilling the requirements of those subregulations.

National plans.

6. (1)(a) The competent authority may define and implement national plans for reducing emissions from the activities and industrial installations covered by subregulation (2) of regulation 2, excluding activities 4 and 11 of Schedule II. None of the other activities may be excluded from the scope of these regulations by means of a national plan. These plans shall result in a reduction of the annual emissions of VOCs from existing installations covered by these regulations by at least the same amount and within the same time frame as would have been achieved by applying the emission limits under subregulations (2) and (3) of regulation 5 and Schedule II, during the validity period of the national plan.

(b) The competent authority shall where necessary update the national plan every three years. When the competent authority defines and implements national plans, it may exempt existing installations from implementation of the emission limit

values laid down in subregulations (2) and (3) of regulation 5 and Schedule II.

(2) The competent authority shall in its national plan include a list of the measures taken or to be taken to ensure that the aim specified in subregulation (1) of this regulation will be achieved, including details of the proposed plan monitoring mechanism. It shall also include binding interim reduction targets against which progress toward the aim can be measured as well as:

(a) an identification of the activity or activities to which the plan applies;

(b) the reduction in emissions to be achieved by those activities which corresponds to that which would have been achieved by applying the emission limits as specified in subregulation (1) of this regulation;

(c) the number of installations affected by the plan and their total emissions and the total emission of each of the activities.

(3) The competent authority shall include in its plan a full description of the range of instruments through which its requirements will be achieved, evidence that these instruments will be enforceable and details of the means by which compliance with the plan will be demonstrated.

(4) The competent authority shall ensure that the plan shall be accompanied by supporting documentation sufficient to verify that the aim of subregulation (1) of this regulation will be achieved. Existing installations undergoing a substantial change shall remain within the scope of the national plan, provided that they were part of this plan before undergoing such substantial change.

(5) The competent authority shall be responsible for the collection and evaluation of the information required by subregulation (4) and for the implementation of the national plan.

Monitoring.

7. (1) The competent authority shall request the operator of an installation covered by these regulations to supply to it once a year or on request, with any data that enables the competent authority to verify compliance with these regulations.

(2) The competent authority shall ensure that channels to which abatement equipment is connected, and which at the final

point of discharge emit more than an average of 10 kg/h of total organic carbon, are monitored continuously for compliance.

(3) In the other cases, the competent authority shall ensure that either continuous or periodic measurements are carried out:

Provided that for periodic measurements at least three readings shall be obtained during each measurement exercise:

Provided further that measurements are not required in the case where end-of-pipe abatement equipment is not needed to comply with these regulations.

Compliance with emission limit values.

8. (1) The competent authority shall ensure that any operator shall, to the satisfaction of the authority, comply with:

(a) emission limit values in waste gases, fugitive emission values and total emission limit values;

(b) the requirements of the reduction scheme under Schedule III;

(c) the provisions of subregulation (3) of regulation 5.

(2) The competent authority shall adopt the guidelines provided in Schedule IV on solvent management plans serving to demonstrate compliance with these parameters:

Provided that gas volumes may be added to the waste gas for cooling or dilution purposes where technically justified but shall not be considered when determining the mass concentration of the pollutant in the waste gas.

(3) The authority shall verify compliance following a substantial change.

(4) In the case of continuous measurements the competent authority shall consider that emission limit values shall be complied with if:

(a) none of the averages over 24 hours of normal operation exceeds the emission limit values, and

(b) none of the hourly averages exceeds the emission limit values by more than a factor of 1.5.

(5) In the case of periodic measurements the emission limit values shall be considered by the competent authority to be complied with if, in one monitoring exercise:

(a) the average of all the readings does not exceed the emission limit values, and

(b) none of the hourly averages exceeds the emission limit value by more than a factor of 1.5.

(6) The competent authority shall ensure that compliance with the provisions of subregulations (7) and (8) of regulation 5 shall be verified on the basis of the sum of the mass concentrations of the individual volatile organic compounds concerned:

Provided that for all other cases, compliance shall be verified on the bases of the total mass of organic carbon emitted unless otherwise specified in Schedule II.

Non-compliance.

9. The competent authority shall ensure that, if it is found that the requirements of these regulations have been breached:

(a) the operator informs the competent authority and takes measures to ensure that compliance is restored within the shortest possible time;

(b) in cases of non-compliance causing immediate danger to human health and as long as compliance is not restored under the conditions of paragraph (a), operation of the activity is suspended.

Information systems and reporting.

10. At intervals of three years, the competent authority shall publish a report on the implementation of these regulations. The competent authority shall publish the reports subject to the Freedom of Access to Information on the Environment Regulations, 2005. The first report shall cover the period of the first three years after the date referred to in subregulation (2) of regulation 1 of these regulations:

L.N. 116 of 2005.

Provided that the information compiled under subregulation (1) of this regulation shall, in particular, include sufficient representative data to demonstrate that the requirements of regulation 5 and, as the case may be, the requirements of regulation 6 have been complied with.

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Public access to information.

11. (1) Without prejudice to the Freedom of Access to Information on the Environment Regulations, 2005, the competent authority shall take the necessary measures to ensure that applications for authorisation for new installations or for substantial changes of those installations requiring a permit, are made available for an appropriate period of time to the public, to enable it to comment on them before the competent authority reaches a decision:

Provided that no obligation to reformat the information for the public is implied. The decision of the competent authority, including a copy of the authorisation, and any subsequent updates, shall also be made available to the public. The general binding rules applicable for installations and the list of registered and authorised activities shall be made available to the public.

(2) The results of emission-monitoring as required under the authorisation or registration conditions referred to in regulations 7 and 8 and held by the competent authority, shall be made available to the public.

(3) Subregulations (1) and (2) of this regulation shall apply, subject to the restrictions regarding grounds for refusal by public authorities to provide information, including commercial and industrial confidentiality, laid down in the Freedom of Access to Information on the Environment Regulations, 2005.

Offences under these regulations.

12. Any person shall be guilty of an offence under these regulations if:

(a) he fails to comply with any order lawfully given in terms of any provision of these regulations; or

(b) he contravenes any restriction, prohibition or requirement imposed by or under these regulations; or

(c) he conspires or attempts, or aids, or abets, any other person by whatever means including advertising, counselling or procurement to contravene the provisions of these regulations or to fail to comply with any such provisions, including any order lawfully given in terms of any of the provisions of these regulations, or to contravene any restriction, prohibition or requirement imposed by or under the said regulations.

Penalties.

13. Any person who commits an offence against these regulations shall, on conviction, be liable:

(a) on a first conviction to a fine (*multa*) of not less than one thousand euro but not exceeding two thousand euro;

(b) on a second or subsequent convictions, to a fine (*multa*) of not less than two thousand euro, but not exceeding five thousand euro or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment:

Provided that whenever any person is found guilty of committing an offence under these regulations by means of vehicle, the owner of the said vehicle, where applicable, is held liable in the same manner and degree:

Provided further that the court shall order any person who has been found guilty of committing an offence against these regulations to pay for the expenses incurred by the public entities and, or other persons acting on their behalf involved in the implementation of these regulations and restitution of the environment as a result of the said offence, the revocation of the permit issued by the Police and the confiscation of the *corpus delicti*.

Applicability of the Criminal Code.

14. (1) The provisions of article 23 and subarticle (1) of article 30 of the Criminal Code shall, *mutatis mutandis*, apply to proceedings, in respect of offences against these regulations, so however that the disqualification from holding or obtaining a licence, permit or authority shall in no case be for less than one year.

(2) Notwithstanding the provisions of article 370 of the Criminal Code, proceedings for an offence against these regulations shall be taken before the Court of Magistrates (Malta) or the Court of Magistrates (Gozo), as the case may be, and shall be in accordance with the provisions of the Criminal Code regulating the procedure before the said courts as courts of criminal judicature.

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(3) Notwithstanding the provisions of the Criminal Code, the Attorney General shall always have a right of appeal to the Court of Criminal Appeal from any judgement given by the Court of Magistrates (Malta) or the Court of Magistrates (Gozo) in respect of proceedings for any offence against these regulations.

Revokes L.N. 225 of 2001.

15. The Limitation of Emissions of Volatile Organic Compounds Regulations, 2001 are hereby revoked.

SCHEDULE I

This Schedule contains the categories of activity referred to in subregulation (2) of regulation 2. When operated above the thresholds listed in Schedule II, the activities mentioned in this Schedule fall within scope of these regulations. In each case the activity includes the cleaning of equipment but not the cleaning of products unless specified otherwise.

Adhesive coating

- Any activity in which an adhesive is applied to a surface, with the exception of adhesive coating and laminating associated with printing activities.

Coating activity

- Any activity whereby a single or multiple application of a continuous film of coating is applied to:

- vehicles as listed below:

- new cars, defined as vehicles of category M1 in the Type Approval of Motor Vehicles and their Trailer, 2000, and of category N1 in so far as they are coated at the same installation as M1 vehicles.

- truck cabins, defined as the housing for the driver, and all integrated housing for the technical equipment, of vehicles of categories N2 and N3 in the Type Approval of Motor Vehicles and their Trailers as in Directive 70/156/EEC.

- vans and trucks, defined as vehicles of categories defined as vehicles of categories N1, N2 and N3 in the Type Approval of Motor Vehicles and their Trailers as in Directive 70/156/EEC, but not including truck cabins.

- buses, defined as vehicles of categories M2 and M3 in the Type Approval of Motor Vehicles and their Trailers as in Directive 70/156/EEC.

- trailers, defined in categories O1, O2, O3 and O4 in the Type Approval of Motor Vehicles and their Trailers as in Directive 70/156/EEC.

- metal and plastic surfaces including surfaces of airplanes, ships trains, etc.,

- wooden surfaces,

- textile, fabric, film and paper surfaces,

- leather

It does not include the coating of substrate with metals by electrophoretic and chemical spraying techniques. If the coating activity includes a step in which the same article is printed by whatever technique used, that printing step is considered part of the coating activity.

Coil coating

- Any activity where coiled steel, stainless steel, coated steel, copper alloys or aluminium strip is coated with either a film forming or laminate coating in a continuous process.

Dry Cleaning

- Any industrial or commercial activity using VOCs in an installation to clean garments, furnishing and similar consumer goods with the exception of the manual removal of stains and spots in the textile and clothing industry.

Footwear manufacture

- Any activity of producing complete footwear or parts thereof.

Manufacture of coating preparations, varnishes, inks and adhesives

- the manufacture of any coating preparations, varnishes, inks and adhesives. This also includes the manufacture of intermediates (where carried out at the same site), by mixing of pigments, resins and adhesive materials with organic solvent or other carrier, including dispersion and predispersion activities, viscosity and tint adjustments and operations for filling the final product into its container.

Manufacturing of pharmaceutical products

- The chemical synthesis, fermentation, extraction, formulation and finishing of pharmaceutical products and where carried out at the same site, the manufacture of intermediate products.

Printing activities

- Any reproduction activity of text and/or images in which, with the use of an image carrier, ink is transferred onto whatever type of surface. It includes associated varnishing, coating and laminating techniques. However, only the following sub-processes are subject to these regulations:

- flexography - a printing activity using an image carrier of rubber or elastic photopolymers on which the printing areas are above the non-printing areas, using liquid inks which dry through evaporation.

- heatset web offset printing - a web-fed printing activity using an image carrier in which the printing and non-printing area are in the same plane, where web-fed means that the material to be printed is fed to the machine from a reel as distinct from separate sheets. The non-printing area is treated to attract water and thus reject ink. The printing area is treated to receive and transmit ink to the surface to be printed. Evaporation takes place in an oven where hot air is used to heat the printed material.

- laminating associated to a printing activity - the adhering together of two or more flexible materials to produce laminates.

- publication rotogravure - a rotogravure printing activity used for printing paper for magazines, brochures, catalogues or similar products, using toluene-based links.

- rotogravure - a printing activity using a cylindrical image carrier in which the printing area is below the non-printing area, using liquid inks which dry through evaporation. The recesses are filled with ink, and the surplus is cleaned off the non-printing area before the surface to be printed contacts the cylinder and lifts the ink from the recesses.

- rotary screen printing - a web-fed printing activity in which the ink is passed onto the surface to be printed by forcing it through a porous image carrier, in which the printing area is open and the non-printing area is sealed off, using liquid inks which dry only through evaporation. Web-fed means that the material to be printed is fed to the machine from a reel as distinct from separate sheets.

- varnishing - an activity by which a varnish or an adhesive coating for the purpose of later sealing the packaging material is applied to a flexible material.

Rubber conversion

- Any activity of mixing, milling, blending, calendaring, extrusion and vulcanization of natural or synthetic rubber and any ancillary operations for converting natural or synthetic rubber into a finished product.

Surface cleaning

- Any activity except dry cleaning using organic solvents to remove contamination from the surface of material including degreasing. A cleaning activity consisting of more than one step before or after any other activity shall be considered as one surface cleaning activity. This activity does not refer to the cleaning of the equipment but to the cleaning of the surface of products.

Vegetable oil & animal fat extraction and vegetable oil refining activities

- Any activity to extract vegetable oil from seeds and other vegetable matter, the processing of dry residues to produce animal feed, the purification of fats and vegetable oils derived from seeds, vegetable matter and/or animal matter.

Vehicle refinishing

- Any industrial or commercial coating and /or degreasing activities performing:

  - the original coating of road as in Directive 70/156 EEC as defined in the Type Approval of Motor Vehicles and their Trailers Regulations, part of them with refinishing-type materials, where is carried out away from the original manufacturing line, or

  - the coating of trailers (including semi-trailers)(category O)

Winding wire coating

- Any coating activity of metallic conductors used for winding the coils in transformers and motors, etc.

Wood impregnation

- Any activity giving a loading or preservative in timber.

Wood and plastic lamination

- Any activity to adhere together wood and/or plastic to produce laminated products.

SCHEDULE II

I. THRESHOLDS AND EMISSION CONTROLS

	Activity (solvent consumption threshold in tonnes/year)	Threshold (solvent consumption threshold in tonnes/year)	Emission limit values in waste gases (mg C/Nm^3)	Fugitive emission values (percentage of solvent input)		Total emission limit values		Special provisions
				New	Existing	New	Existing	
1	Heatset web offset printing (>15)	15-25	100	30 (1)				(1) Solvent residue in finished product is not to be considered as part of fugitive emissions.
		> 25	20	30 (1)				
2	Publication rotogravure (>25)		75	10	15			
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing units (>15)	15-25	100	25				(1) Threshold for rotary screen printing on textile and on cardboard.
		>25	100	20				
		>30(1)	100	20				
4	Surface cleaning (1)	1-5	20(2)	15				(1) Using compounds specified in regulation 5(6) and (8).
		> 5	20(2)	10				

						(2) Limit refers to mass of compounds in mg/Nm^3, and not to total carbon.
5	Other surface cleaning (>2)	2-10 > 10	75(1) 75(1)	20(1) 15(1)		(1) Installations which demonstrate to MEPA that the average organic solvent content of all cleaning material used does not exceed 30% by weight are exempt from application of these values.
6	Vehicle coating (<15) and vehicle refinishing	>0.5	50(1)	25		(1) Compliance in accordance with Article 9(3) should be demonstarted based on 15minute average measurements.

7	Coil coating (>25)		50[1]	5 10		[1] For installations which use techniques which allow reuse of recovered solvents, the emision limit shall be 150.
8	Other coating including metal, plastic, textile [3], fabric, film and paper coating (>5)	5-15 > 15	100[1] [4] 50/75[2] [3] [4]	25[4] 20[4]		[1] Emission limit value applies to coating application and drying processes operated under contained conditions. [2] The first emission limit values applies to drying processes, the second to coating application processes. [3] For textile coating installations which use techniques which allow reuse of recovered

						solvents, the emission limit applied to coating application and drying processes taken together shall be 150. (4) Coating activities which cannot be applied under contained conditions (such as shipbuilding, aircraft painting) may be exempted from these values, in accordance with regulation 5(3)(b).
9	Winding wire coating (>5)				10 g/kg(1) 5 g/kg(2)	(1) Applies for installations where average diameter of wire ≤ 0.1mm. (2) Applies for all other installations.

10	Coating of wooden surfaces (>15)	15-25 > 25	100(1) 50/75(2)	25 20		(1) Emission limit applies to coating application and drying processes operated under contained conditions. (2) First values apply to drying processes, the second to coating application processes.
11	Dry cleaning				20 g/kg (1) (2)	(1) Expressed in mass of solvent emitted per kilogram of product cleaned and dried. (2) The emission limit in regulation 5(8) does not appply for this sector.
12	Wood impregnation (>25)		100(1)	45	11 kg/ m^3	(1) Does not apply for impregnation with creosote.

13	Coating of leather (>10)	10-25 >25 (>10)[1]			85 g/m^2 75 g/m^2 150 g/m^2	Emission limits are expressed in grams of solvent emitted per m2 of product produced. [1] For leather coating activities in furnishing and particular leather goods used as small consumer goods like bags, belts, wallets, etc.
14	Footwear manufacture (>5)				25 g per pair	Total emission limit values are expressed in grams of solvent emitted per pair of complete footwear produced.
15	Wood and plastic lamination (>5)				30 g/m^2	

16	Adhesive coating (>5)	5-15 >15	50(1) 50(1)	25 20		(1) If techniques are used which allow reuse of recovered solvent, the emission limit value in waste gases shall be 150
17	Manufacture of coating preparations varnishes, inks and adhesives (>100)	100-1000 >1000	150 150	5 5% of solvent input 3 3% of solvent input		The fugitive emission values do not include solvent sold as part of a coatings preparation in a sealed container.
18	Rubber conversion (>15)		20*	25**	25% of solvent input	(1) If techniques are used which allow reuse of recovered solvent, the emission limit value in waste gases shall be 150. (2) The fugitive emission value does not include

						solvent sold as part of products or preperation in a sealed container.
19	Vegetable oil & animal fat extraction and vegetable oil refining activities (>10)				Animal fat: 1,5 kg/tonne Castor: 3 kg/tonne Rape seed: 1 kg/tone	(1) Total emission limit values for installations processing individual batches of seeds and other vegetable matter should be set by the competent authority on a case-by-case basis, applying to best available techniques. (2) Applies to all fractionation processes excluding de-gumming (the removal of gums from the oil). (3) Applies to de-gumming.

					Sunflower seed: 1 kg/tonne Soya beans (normal crush): 0,8 kg/tonne Soya beans (white flakes): 1,2 kg/tonne Other seeds and oyjer vegetable matter: 3 kg/tonne (1) 1,5 kg/tonne(2) 4 kg/tonne (3)	
20	Manufacturing of pharmaceutical products (>50)		20 (1)	5 (2) 15 (2)	5% of solvent input 15 % of solvent input	(1) In case techniques allows solvent reuse, emission limit shall be 150 (2) Fugitive emission values do not include solvent sold as part of a

						coatings preperation in a sealed container.

II. THE VEHICLE COATING INDUSTRY

The total emission limit values are expressed in terms of solvent emitted in relation to the surface area of product in square meters and in kilograms of solvent emitted in relation to the car body.

The surface area of any product dealt with in the table below is defined as follows:

- the surface area calculated from the total electrophoretic coating area, and the surface area of any parts that might be added in successive phases of the coating process which are coated with the same coatings as those used for the product in question, or the total surface area of the product coated in the installation.

The surface of the electrophoretic coating area is calculated using the formula:

$$\frac{\text{2x total weight of product shell}}{\text{average thickness of metal sheet x density of metal sheet}}$$

This method shall also be applied for other coated parts made out of sheets.

Computer aided design or other equivalent methods shall be used to calculate the surface area of other parts added, or the total surface area coated in the installation.

The total emission limit value in the table below refers to all process stages carried out at the same installation from electrophoretic coating, or any other kind of coating process, through to the final wax and polish of topcoating inclusive, as well as solvent used in cleaning of process equipment, including spray booths and other fixed equipment, both during and outside of production time. The total emission limit value is expressed as the mass sum of organic compounds per m^2 of the total surface area of coated product and as the mass sum of organic compounds per car body.

Activity (solvent consumption threshold in tonnes/year)	Production threshold (refers to annual production of coated item)	Total emission limit value	
		New	Existing
Coating of new cars (>15)	> 5000	45 g/m^2 or 1,3 kg/body + 33 g/m^2	60 g/m^2 or 1,9 kg/body + 41 g/m^2
	≤ 5000 monocoque or > 3500 chassis-built	90 g/m^2 or 1,5 kg/body + 70 g/m^2	90 g/m^2 or 1,5 kg/body + 70 g/m^2

Activity (solvent consumption threshold in tonnes/year)	Production threshold (refers to annual production of coated item)	Total emission limit value	
		New	Existing
		Total emission limit (g/m^2)	
Coating of new truck cabins (>15)	≤ 5000 > 5000	65 55	85 75
Coating of new vans and trucks (>15)	≤ 2500 > 2500	90 70	120 90
Coating of new buses (>15)	≤ 2000 > 2000	210 150	290 225

Vehicle coating installations below the solvent consumption thresholds in the table above shall meet the requirements for the vehicle refinishing sector in Schedule II.

SCHEDULE III

REDUCTION SCHEME

1. Principles

The purpose of the reduction scheme is to allow the operator the possibility to achieve by other means emission reductions, equivalent to those achieved if the emission limit values were to be applied. To that end the operator may use any reduction scheme, specially designed for his installation, provided that in the end an equivalent emission reduction is achieved. Member States shall report according to Article 11 of the Directive to the Commission about the progress in achieving the same emission reduction, including the experience from the application of the reduction scheme.

2. Practice

In the case of applying coatings, varnishes, adhesives or inks, the following scheme can be used. Where the following method is inappropriate the competent authority may allow an operator to apply any alternative exemption scheme which satisfies the principles outlined here. The design of the scheme takes into account the following facts:

(i) where substitutes containing little or no solvent are still under development, a time extension must be given to the operator to implement his emission reduction plans;

(ii) the reference point for emission reductions should correspond as closely as possible to the emissions which would have resulted had no reduction action been taken.

The following scheme shall for installations for which a constant solid content of product can be assumed and used to define the reference point for emission reductions:

(i) the operator shall forward an emission reduction plan which includes in particular decreases in the average solvent content of the total input and/or increased efficiency in the use of solids to achieve a reduction of the total emissions form the installation to a given percentage of the annual reference emissions, termed the target emission.

(ii) The annual reference emission is calculated as follows:

(a) The total mass of solids in the quantity of coating and/or ink, varnish or adhesive consumed in a year is determined. Solids are all materials in coatings, inks, varnishes and adhesives that become solid once the water or the volatile organic compounds are evaporated.

(b) The annual refernce emissions are calculated by multiplying the mass determined in (a) by the appropriate factor listed in the table below. The Authority may adjust these factors for individual installations to reflect documented increased efficiency in the use of solids.

Activity	Multiplication factor for use in item (ii)(b)
Rotogravure printing; flexography printing; laminating as part of a printing activity; varnishing as part of a printing activity; wood coating; coating of textiles, fabric film or paper; adhesive coating	4
Coil coating, vehicle refinishing	3
Food contact coating, aerospace coatings	2.33
Other coatings and rotary screen printing	1.5

(c) The target emission is equal to the annual reference emission multiplied by a percentage equal to:

- (the fugitive emission value + 15), for installations falling within item 6 and the lower threshold band of items 8 and 10 of Schedule II,

- (the fugitive emission value + 5) for all the other installations.

(d) Compliance is achieved if the actual solvent emission determined from the solvent management plan is less than or equal to the target emission.

3. Reduction Scheme Calculations

Target Emission Calculations: (A) Total **mass of solids** in inks, varnishes, adhesives and coatings consumed in one year

(B) Reference emission = Mass of solids (A) X multiplication factor

(C) Target emission = Reference emission (B) X (the fugitive emission value + 15) or (the fugitive emission value + 5)

Mass of solids (A) X factor X 25% (fugitive emission value +5)
Since, factor = 4 (for this activity), then 4 and 25% cancel each other, i.e.

For compliance, solvent emission ≤ target emission

SCHEDULE IV

SOLVENT MANAGEMENT PLAN

1. **Introduction**

This Schedule provides guidance on carrying out a solvent management plan. It identifies the principles to be applied (item 2) and provides a framework for the mass balance (item 3) and an indication of the requirements for verification of compliance (item 4).

2. **Principles**

The solvent management plan serves the following purposes:

(i) verification of compliance as specified in regulation 8 (1);

(ii) identification of future reduction options;

(iii) enabling of the provision of information on solvent consumption solvent emissions and compliance with the regulations to the public.

3. **Definitions**

The following definitions provide a framework for the mass balance exercise.

Inputs of organic solvents (I):

I1 The quantity of organic solvents or their quantity in preparations purchased which are used as input into the process in the time frame over which the mass balance is being calculated.

I2 The quantity of organic solvents or their quantity in preparations recovered
and reused as solvent input into the process. (The recycled solvent is counted every time it is used to carry out the activity.)

Outputs of organic solvents (O):

O1 Emissions in waste gases.

O2 Organic solvents lost in water, if appropriate taking into account waste water treatment when calculating O5.

O3 The quantity of organic solvents which remains as contamination or residue in products output from the process.

O4 Uncaptured emissions of organic solvents to air. This includes the general ventilation of rooms, where air is released to the outside environment via windows, doors, vents and similar openings.

O5 Organic solvents and#or organic compounds lost due to chemical or physical reactions (including for example those which are destroyed, e.g. by incineration or other waste gas or waste water treatments, or captured, e.g. by absorption, as long as they are not counted under O6, O7 or O8).

O6 Organic solvents contained in collected waste.

O7 Organic solvents, or organic solvents contained in preparations, which are sold or are intended to be sold as a commercially valuable product.

O8 Organic solvents contained in preparations recovered for reuse but not as input into the process, as long as not counted under O7.

O9 Organic solvents released in other ways.

4. **Guidance on use of the solvent management plan for verification of compliance**

The use made of the solvent management plan will be determined by the particular requirement which is to be verified, as follows:

(i) Verification of compliance with the reduction option in Schedule III, with a total emission limit value expressed in solvent emissions per unit product, or otherwise stated in Schedule II.

(a) For all activities using Schedule III the solvent management plan should be done annually to determine consumption (C). Consumption can be calculated according to the following equation:

C = I1 – O8

A parallel exercise should also be undertaken to determine solids used in coating in order to derive the annual reference emission and the target emission each year.

(b) For assessing compliance with a total emission limit value expressed in solvent emissions per unit product or otherwise stated in Schedule II, the solvent management plan should be done annually to determine emissions (E). Emissions can be calculated according to the following equation:

E = F + O1

where F is the fugitive emission as defined in section (ii)(a). The emission figure should then be divided by the relevant product parameter.

(c) For assessing compliance with the requirements of regulation 5(5)(b)(ii), the solvent management plan should be done annually to determine total emissions from all activities concerned, and that figure should then be compared with the total emissions that would have resulted had the requirements of Schedule II been met for each activity separately.

(ii) Determination of fugitive emissions for comparison with fugitive emission values in Schedule II:

(a) *Methodology*

The fugitive emission can be calculated according to the following equation:

F = I1 – O1 – O5 – O6 – O7 – O8

or

F = O2 + O3 + O4 + O9

This quantity can be determined by direct measurement of the quantities.
Alternatively, an equivalent calculation can be made by other means, for instance by using the capture efficiency of the process.

The fugitive emission value is expressed as a proportion of the input, which can be calculated according to the following equation:

I = I1 + I2

(b) *Frequency*

Determination of fugitive emissions can be done by a short but comprehensive set of measurements. It need not be done again until the equipment is modified.”.

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