

Sustainable Public Procurement-fiche

| Product / service | Version | Date |
|---------------------------------------|----------|---------------|
| Mortar adhesive plastering | Advanced | December 2010 |

Scope

The following criteria apply to mortar and plaster renders and mineral based adhesives.

These include:

- Plaster and Mortar for Internal Applications
- Gypsum Renders and Renders containing Gypsum for Internal Applications
- Loam/Clay Mortar
- Stabilised Loam/Clay Mortar
- Renders for External Applications
- Renders for External Thermal Insulation Composite Systems
- Lime and Cement Based Renders
- Mineral Based Adhesives and Fillers

1) Subject matter

Mortar adhesive plastering produced with environmentally friendly materials and processes and produced in a socially responsible way.

1.1. The subject matter in the framework of the organizations policy.

“For <.....> (name of the public authority), the care for the environment and social aspects is important. It is stated in her <strategic policies>, <mission>, <vision>, <procurement policy>, ...”

1.2. “Reserved contracts”

This category of contract is handled separately in Article 19 of Directive 2004/18/EC. This article permits the member states to “reserve” the right to participate in public contract award procedures. It includes contracts awarded to sheltered workshops or awarded in the context of sheltered employment programmes restricted to handicapped persons who cannot conduct professional activities under normal conditions. Paragraph 2 of Article 18a of the Law of 24 December 1993 has already taken a step in this direction by enabling, within the European thresholds, an identical strategy.

2) Exclusion criteria

2.1. Social aspects:

Buyers can take account of social aspects in there procurement. For more information about the different possibilities see:

<http://www.gidsvoorduurzameaankopen.be/en/node/108>

3) Technical capacity

-

4) Market information

-

5) Technical specifications

For this product group there is, at present, just one eco-label available which forms the basis for formulating environmental compliance criteria. A list showing the criteria taken from the specifications document for this eco-label is given below. Buyers may include these criteria in the technical specifications of their own tender documents. Alternatively, they may give them a more optional character by incorporating them as awarding criteria in the tender, all this depending on the procedure that's chosen.

In addition, the PODDO has divided a list (see below) into key criteria and other criteria. The first group is definitely recommended when ordering green and sustainable products in the case of public procurement contracts.

KEY-CRITERIA:

a) Functional requirements (Nature plus)

- The renders must comply with the requirements of DIN 18550 or a comparable standard (with the exception of loam/clay renders.) The manufacturer must provide documentary evidence of compliance.

b) Composition (Nature Plus)

- The proportion of renewable and / or mineral raw materials (including water) must be superior to 85 mass %. Input materials must be selected so as to take due account of functional suitability, environmental compatibility, and freedom from health risks (ecological state-of-the-art).
 - All raw materials only available in limited quantities or not readily and easily obtainable should be substituted with secondary raw materials⁽¹⁾.
- (1) Secondary raw materials are materials recycled from other goods, production waste, or by-products from other processes, all suitably collected and prepared.
- The use of additives with harmful or dangerous properties, as defined by hazardous substances legislation, should - wherever and as far as possible - be minimized.

c) Prohibited substances (Nature Plus)

- The following substances are prohibited:
 - Prohibited goods as per European directive 67/548/EEC⁽¹⁾
 - POP (persistent organic pollutants) : (aldrin, dieldrin, DDT, endrin, heptachlor, chlordane, hexachlorobenzene (HCB), mirex, toxaphene, polychlorinated biphenyl (PCB), dioxins and furans)

- Goods in IARC (International Agency for Research on Cancer) groups 1 and 2a (see annex 2)
- Goods marked with danger symbol “N”, Goods marked with danger symbol “T+”, Goods marked with danger symbol “T : > 0.1 % “
- Goods with the following risk phrase (see annex 1 for R-phrases meaning): R26, R27, R28, R45, R46, R48, R49. (see annex 1)
- Goods with the following risk phrase ratings > 0.1 % : R 23, R 24, R 25, R 60, R 61, R 62, R 63, R 65. (see annex 1)
- Arsenic and arsenic compounds
- Lead and lead compounds
- Cadmium and cadmium compounds
- Mercury and mercury compounds
- Organotin compounds
- Antimony trioxide
- Pyrethroids
- Hydrofluorocarbons (HFC)
- Organic halogen phosphates
- Phthalic acid ester (except polyethylene terephthalate (PET))

(1) Classification, packaging and labelling of dangerous substances directive: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31967L0548:en:NOT>.

d) Chemicals: substance restrictions (Nature Plus)

- The use of titanium dioxide must comply with Directive 92/112/EEC⁽¹⁾.
⁽¹⁾ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0112:en:HTML>.
- The following product additives are forbidden:
 - Glycol ethers and esters
 - APEO's (alkylphenol ethoxylates)
 - Halogenated Isothiazolinone
 - Formaldehyde decomposition agents

Only pigments from iron oxide or inorganic substances with a comparable or lower level of toxicity are permitted. Under no circumstances are ecologically and toxicologically questionable pigments such as Naples yellow (also called antimony yellow) or metal compounds permitted.

e) Consumer information (Nature Plus)

- Consumers shall be provided:
 - A full declaration of the ingredients listed in descending order according to the proportion contained within the product: up to 1% mass % of the substance; less than 1% mass %: at least functional designation.

f) Environmental prescriptions (Nature Plus)

- Emissions of the following items in interior premises must be limited in accordance with the product-specific and product-group-specific criteria :
 - organic and anorganic substances
 - odors
 - radio-activity
 - dust particles and fibers
- Emissions into the water, ground, atmosphere must be limited in accordance with the product-specific and product-group-specific criteria.

OTHER CRITERIA:

g) Environmental requirements (Nature Plus)

- A certificate of origin must be provided for all the product components.
- When employing mineral raw materials, the use of already available or deducible secondary raw materials⁽¹⁾ should be prioritized. Non-renewable natural resources may only be used if secondary raw materials are not available in sufficient quantities or quality levels or within an environmentally justifiable transport distance. Details must be provided of the situation relating to the current and possible future availability of resources and concrete planning measures of when and in which quantities primary raw materials will be replaced by secondary raw materials.

⁽¹⁾ Secondary raw materials are materials recycled from other goods, production waste, or by-products from other processes, all suitably collected and prepared.

- The extraction of mineral raw materials must comply with the statutory requirements relating to environmental and wildlife protection. The manufacturer must provide documentary evidence of compliance.
- The extraction of natural mineral raw materials must not conflict with or impair the statutory national or international aims for protected areas or those areas worthy of protection.
- Re-naturalisation: the manufacturer must prove the precautions/measures taken to ensure the protection of the environment, the ground-water, the surface and the future use of the surface on completion of the extraction process. The re-naturalisation of the extraction area must comply with the regulations of the European Flora-Fauna-Habitat-Guidelines and the Bird Protection and Water Protection Guidelines (92/43/EEC⁽¹⁾, 79/409/EEC⁽²⁾, 2000/60/EC⁽³⁾). Deterioration in the condition of the affected area is prohibited. The manufacturer/extractor must provide a maintenance and development plan for the extraction area. This plan must be guaranteed and adapted to the natural development of the area

and supported by an independent expert assessment. The manufacturer must provide evidence of the ecological quality improvements achieved through the re-naturalisation measures applied to the abandoned/unused areas as compared to the condition before commencement of the extraction process.

- (1) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0043:EN:html>
 (2) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31979L0409:en:HTML>
 (3) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0060:en:HTML>

Evidence:

The compliance with all the criteria mentioned above can be proved with the following label:



NATURE PLUS

In case that the tendering company can present this label, any further proof is not necessary. Any other suitable evidence from a recognized body can also be used.

6) Awarding the contract:

| | Criteria --- For example --- | Weight |
|---|---|---------------|
| 1 | Price <i>Calculation (e.g.):</i> Lowest offered price/ stated price x 0,60 | e.g. 60% |
| 2 | Environmental criteria (The public authority formulates the points it wants to assign to the below mentioned criteria) <i>Calculation (e.g.):</i> Total scored points / maximum number of points x 0,35 | e.g. 35% |
| 3 | ... | e.g. 5 % |
| 4 | ... | e.g. |

In above mentioned table, the weight of the environmental criteria shall be stated by the buyer in function of its particular procurement. Representatives of several sectors federations mention often to not underestimate this weight to give sustainability in the awarding phase a chance at all.

The environmental criteria in the above mentioned table concern the following issues: see point 5

7) Performance clauses:

7.1. Environmental aspects:

a) Functional requirements (Nature Plus)

- Product quality must be guaranteed by means of a quality assurance system.

b) Consumer information (Nature Plus)

- Consumers shall be provided:
 - Indication of the place and country where product was manufactured.
 - If sensitizing input materials are used, there must be a note on the packaging indicating where more detailed information can be obtained (e.g. in the product information / technical data sheet).
 - processing/handling instructions and safety requirements
 - batch data
 - consumption data
 - storage capabilities and requirements; minimum storage life/usage life; packaging disposal instructions

c) Packaging (Nature Plus)

- Container sizes available must be suited to demand.
- Packaging must be reusable.
- Plastic materials used in packaging must be halogen-free and unplasticized.
- Paper and cardboard packaging must be made from recycling paper or FSC-certified wood (Forest Stewardship Council).
- Plastic packaging must preferably comprise polyolefins (in exceptional cases, polyethylene terephthalate (PET), polystyrene, or polycarbonates).

d) User's prescriptions (Nature Plus)

- Provision of detailed and meaningful product information :
 - areas of application
 - advisory notes on processing, routine care, and preventive maintenance (auxiliary materials, accessories, treatment)
 - advisory notes on risks and dangers - and the necessary protective measures
 - advisory notes on disposal after use
 - advisory notes on risk of sensitizing (i.e. sensitive or allergic reaction)

It must be possible to process the product in a way that is largely free from health risks.

e) Environmental prescriptions (Nature Plus)

- A concept for dismantling, accepting the return of old products, recuperation, and recycling must be submitted.
- The end product must not be classified as hazardous waste.

7.2. Social aspects:

Buyers can take account of social aspects in their procurement. For more information about the different possibilities see:

<http://www.gidsvoorduurzameaankopen.be/en/node/108>

7.3. Ethical aspects:

“The tenderer undertakes, until the contract has been executed in full, to respect the 8 Basic Conventions of the ILO

By signing his tender, the tenderer undertakes to respect the standards defined in the Basic Conventions of the International Labour Organisation (ILO) and, in particular:

1. The prohibition of forced labour (C29 Forced Labour Convention, 1930, and C105 Abolition of Forced Labour Convention, 1957);
2. The right to freedom of association (C87 Freedom of Association and Protection of the Right to Organise, 1948);
3. The right to organise and collective bargaining (C98 Right to Organise and Collective bargaining, 1949);
4. The prohibition of any discrimination in terms of labour and remuneration (C100 Equal Remuneration, 1951 and C111 Discrimination (Employment and Occupation), 1958);

5. The minimum age for child labour (C138 Minimum Age Convention, 1973), together with the prohibition of the worst forms of child labour (C182 Worst Forms of Child Labour Convention, 1999).

The non-respect of this undertaking may, by virtue of Article 20, §1, 4° of the general specifications annexed to the Royal Decree of 26 September 1996, give rise to the application of the official measures described in § 6 of the same article, including unilateral termination of the contract.”

References

[Information of the public authority that used these clauses in a procurement case]

Annex 1: R-PHRASES

(R-phrases are mentioned on product labels and in product safety datasheets. It can be a useful tool for verification-procedures.)

| | |
|------------------------------|--|
| <u>R1:</u> | Explosive when dry. |
| <u>R2:</u> | Risk of explosion by shock, friction, fire or other sources of ignition. |
| <u>R3:</u> | Extreme risk of explosion by shock, friction, fire or other sources of ignition. |
| <u>R4:</u> | Forms very sensitive explosive metallic compounds. |
| <u>R5:</u> | Heating may cause an explosion. |
| <u>R6:</u> | Explosive with or without contact with air. |
| <u>R7:</u> | May cause fire. |
| <u>R8:</u> | Contact with combustible material may cause fire. |
| <u>R9:</u> | Explosive when mixed with combustible material. |
| <u>R10:</u> | Flammable |
| <u>R11:</u> | Highly flammable |
| <u>R12:</u> | Extremely flammable |
| <u>R13 (obsolete):</u> | <i>Extremely flammable liquid gas (This R-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)</i> |
| <u>R14:</u> | Reacts violently with water. |
| <u>R15:</u> | Contact with water liberates extremely flammable gases. |
| <u>Merck R15.1</u> | <i>Contact with acid liberates extremely flammable gases.</i> |
| <u>R16:</u> | Explosive when mixed with oxidizing substances. |
| <u>R17:</u> | Spontaneously flammable in air. |
| <u>R18:</u> | In use, may form flammable/explosive vapour-air mixture. |
| <u>R19:</u> | May form explosive peroxides. |
| <u>R20:</u> | Harmful by inhalation. |
| <u>R21:</u> | Harmful in contact with skin. |
| <u>R22:</u> | Harmful if swallowed. |
| <u>R23:</u> | Toxic by inhalation. |
| <u>Riedel-de Haen R23K:</u> | <i>Also toxic by inhalation.</i> |
| <u>R24:</u> | Toxic in contact with skin. |
| <u>Riedel-de Haen R24K:</u> | <i>Also toxic in contact with skin.</i> |
| <u>R25:</u> | Toxic if swallowed. |
| <u>Riedel-de Haen R25K:</u> | <i>Also toxic if swallowed.</i> |
| <u>R26:</u> | Very toxic by inhalation. |
| <u>Riedel-de Haen R26K:</u> | <i>Also very toxic by inhalation.</i> |
| <u>R27:</u> | Very toxic in contact with skin |
| <u>Riedel-de Haen R27A:</u> | <i>Very toxic in contact with eyes.</i> |
| <u>Riedel-de Haen R27K:</u> | <i>Also very toxic in contact with skin.</i> |
| <u>Riedel-de Haen R27AK:</u> | <i>Also very toxic in contact with eyes.</i> |
| <u>R28:</u> | Very toxic if swallowed. |
| <u>Riedel-de Haen R28K:</u> | <i>Also very toxic if swallowed.</i> |

* Finance Tower, 8th floor · Kruidtuinlaan 50 / 8 · 1000 Brussels - T + 32 2 524 88 54 · F + 32 2 524 88 70
contact@poddo.belgium.be · www.poddo.belgium.be

| | |
|-----------------------------|---|
| <u>R29:</u> | Contact with water liberates toxic gas. |
| <u>R30:</u> | Can become highly flammable in use. |
| <u>R31:</u> | Contact with acids liberates toxic gas. |
| <u>Merck R31.1</u> | <i>Contact with alkalies liberates toxic gas.</i> |
| <u>R32:</u> | Contact with acids liberates very toxic gas. |
| <u>R33:</u> | Danger of cumulative effects. |
| <u>R34:</u> | Causes burns. |
| <u>R35:</u> | Causes severe burns. |
| <u>R36:</u> | Irritating to eyes. |
| <u>Riedel-de Haen R36A:</u> | <i>Lacrimating</i> |
| <u>R37:</u> | Irritating to respiratory system. |
| <u>R38:</u> | Irritating to skin. |
| <u>R39:</u> | Danger of very serious irreversible effects. |
| <u>R40:</u> | Possible risk of cancer. <i>CAUTION: Until 2001 this R-phrase was used for possible mutagenic or teratogenic risks as well. These risks are now labelled with R68!</i> |
| <u>R41:</u> | Risk of serious damage to eyes. |
| <u>R42:</u> | May cause sensitization by inhalation. |
| <u>R43:</u> | May cause sensitization by skin contact. |
| <u>R44:</u> | Risk of explosion if heated under confinement. |
| <u>R45:</u> | May cause cancer. |
| <u>R46:</u> | May cause heritable genetic damage. |
| <u>R47(obsolete):</u> | <i>May cause deformities. (This R-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)</i> |
| <u>R48:</u> | Danger of serious damage to health by prolonged exposure. |
| <u>R49:</u> | May cause cancer by inhalation. |
| <u>R50:</u> | Very toxic to aquatic organisms. |
| <u>R51:</u> | Toxic to aquatic organisms. |
| <u>R52:</u> | Harmful to aquatic organisms. |
| <u>R53:</u> | May cause long-term adverse effects in the aquatic environment. |
| <u>R54:</u> | Toxic to flora. |
| <u>R55:</u> | Toxic to fauna. |
| <u>R56:</u> | Toxic to soil organisms. |
| <u>R57:</u> | Toxic to bees. |
| <u>R58:</u> | May cause long-term adverse effects in the environment. |
| <u>R59:</u> | Dangerous for the ozone layer. |
| <u>R60:</u> | May impair fertility. |
| <u>R61:</u> | May cause harm to the unborn child. |
| <u>R62:</u> | Possible risk of impaired fertility. |
| <u>R63:</u> | Possible risk of harm to the unborn child. |
| <u>R64:</u> | May cause harm to breastfed babies. |
| <u>R65:</u> | Harmful: may cause lung damage if swallowed. |
| <u>R66:</u> | Repeated exposure may cause skin dryness or cracking. |
| <u>R67:</u> | Vapours may cause drowsiness and dizziness. |
| <u>R68:</u> | Possible risks of irreversible effects. |

COMBINATIONS OF R-PHRASES:

| | |
|---------|--|
| R14/15: | Reacts violently with water, liberating extremely flammable gases. |
| R15/29: | Contact with water liberates toxic, extremely flammable gas. |
| R20/21: | Harmful by inhalation and in contact with skin. |
| R21/22: | Harmful in contact with skin and if swallowed. |
| R20/22: | Harmful by inhalation and if swallowed. |

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- R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
- R21/22: Harmful in contact with skin and if swallowed.
- R23/24: Toxic by inhalation and in contact with skin.
- R24/25: Toxic in contact with skin and if swallowed.
- R23/25: Toxic by inhalation and if swallowed.
- R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
- R24/25: Toxic in contact with skin and if swallowed.
- R26/27: Very toxic by inhalation and in contact with skin.
- R27/28: Very toxic in contact with skin and if swallowed.
- R26/28: Very toxic by inhalation and if swallowed.
- R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.
- R36/37: Irritating to eyes and respiratory system.
- R37/38: Irritating to respiratory system and skin.
- R36/38: Irritating to eyes and skin.
- R36/37/38: Irritating to eyes, respiratory system and skin.
- R39/23: Toxic: danger of very serious irreversible effects through inhalation.
- R39/24: Toxic: danger of very serious irreversible effects in contact with skin.
- R39/25: Toxic: danger of very serious irreversible effects if swallowed.
- R39/23/24: Toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
- R39/23/25: Toxic: danger of very serious irreversible effects through inhalation and if swallowed.
- R39/24/25: Toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
- R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R39/26: Very toxic: danger of very serious irreversible effects through inhalation.
- R39/27: Very toxic: danger of very serious irreversible effects in contact with skin.
- R39/28: Very toxic: danger of very serious irreversible effects if swallowed.
- R39/26/27: Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
- R39/26/28: Very toxic: danger of very serious irreversible effects through inhalation and if swallowed.
- R39/27/28: Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
- R39/26/27/28: Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R42/43: May cause sensitization by inhalation and skin contact.
- R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R48/21: Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
- R48/22: Harmful: danger of serious damage to health by prolonged exposure if swallowed.
- R48/20/21: Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
- R48/20/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- R48/21/22: Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
- R48/20/21/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R48/23: Toxic: danger of serious damage to health by prolonged exposure through inhalation.
- R48/24: Toxic: danger of serious damage to health by prolonged exposure in contact with skin.
- R48/25: Toxic: danger of serious damage to health by prolonged exposure if swallowed.
- R48/23/24: Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
- R48/23/25: Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- R48/24/25: Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
- R48/23/24/25: Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R68/20: Harmful: possible risk of irreversible effects through inhalation.
- R68/21: Harmful: possible risk of irreversible effects in contact with skin.
- R68/22: Harmful: possible risk of irreversible effects if swallowed.
- R68/20/21: Harmful: possible risk of irreversible effects through inhalation and in contact with skin.
- R68/20/22: Harmful: possible risk of irreversible effects through inhalation and if swallowed.
- R68/21/22: Harmful: possible risk of irreversible effects in contact with skin and if swallowed.

* Finance Tower, 8th floor · Kruidtuinlaan 50 / 8 · 1000 Brussels · T + 32 2 524 88 54 · F + 32 2 524 88 70
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R68/20/21/22: Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Annex 2:

Agents Classified by the IARC Monographs, Volumes 1–100

| CAS No | Agent | Group | Volume | Year |
|-------------|--|-------|---------------------|---------|
| 000075-07-0 | Acetaldehyde associated with consumption of alcoholic beverages | 1 | 100E | in prep |
| | Acid mists, strong inorganic | 1 | 54, 100F | in prep |
| 001402-88-2 | Aflatoxins | 1 | 56, 82, 100F | in prep |
| | Alcoholic beverages | 1 | 44, 96, 100E | in prep |
| | Aluminium production | 1 | 34, Sup 7, 100F | in prep |
| 000092-67-1 | 4-Aminobiphenyl | 1 | 1, Sup 7, 99, 100F | in prep |
| | Areca nut | 1 | 85, 100E | in prep |
| | Aristolochic acid (NB: Overall evaluation upgraded from 2A to 1 based on mechanistic and other relevant data) | 1 | 82, 100A | in prep |
| | Aristolochic acid, plants containing | 1 | 82, 100A | in prep |
| 007440-38-2 | Arsenic and inorganic arsenic compounds | 1 | 23, Sup 7, 100C | in prep |
| 001332-21-4 | Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) (NB: Mineral substances (e.g. talc or vermiculite) that contain asbestos should also be regarded as <i>carcinogenic to humans</i> .) | 1 | 14, Sup 7, 100C | in prep |
| 013768-00-8 | | | | |
| 012172-73-5 | | | | |
| 017068-78-9 | | | | |
| 012001-29-5 | | | | |
| 012001-28-4 | | | | |
| 014567-73-8 | Auramine production | 1 | Sup 7, 99, 100F | in prep |
| 000446-86-6 | Azathioprine | 1 | 26, Sup 7, 100A | in prep |
| 000071-43-2 | Benzene | 1 | 29, Sup 7, 100F | in prep |
| 000092-87-5 | Benzidine | 1 | 29, Sup 7, 99, 100F | in prep |
| | Benzidine, dyes metabolized to (NB: Overall evaluation upgraded to from 2A to 1 based on mechanistic and other relevant data) | 1 | 99, 100F | in prep |
| 000050-32-8 | Benzo[<i>a</i>]pyrene (NB: Overall evaluation upgraded from 2B to 1 based on mechanistic and other relevant data) | 1 | 92, 100F | in prep |
| 007440-41-7 | Beryllium and beryllium compounds | 1 | 58, 100C | in prep |
| | Betel quid with tobacco | 1 | 85, 100E | in prep |
| | Betel quid without tobacco | 1 | 85, 100E | in prep |
| 000542-88-1 | Bis(chloromethyl)ether, chloromethyl methyl ether | 1 | 4, Sup 7, 100F | in prep |
| 000107-30-2 | (technical-grade) | | | |
| 000055-98-1 | Busulphan | 1 | 4, Sup 7, 100A | in prep |
| 000106-99-0 | 1,3-Butadiene | 1 | 97, 100F | in prep |
| 007440-43-9 | Cadmium and cadmium compounds | 1 | 58, 100C | in prep |

| CAS No | Agent | Group | Volume | Year |
|-------------|---|-------|-----------------|---------|
| 000305-03-3 | Chlorambucil | 1 | 26, Sup 7, 100A | in prep |
| 000494-03-1 | Chlornaphazine | 1 | 4, Sup 7, 100A | in prep |
| 018540-29-9 | Chromium (VI) compounds | 1 | 49, 100C | in prep |
| | <i>Clonorchis sinensis</i> (infection with) | 1 | 61, 100B | in prep |
| | Coal, indoor emissions from household combustion of | 1 | 95, 100E | in prep |
| | Coal gasification | 1 | 92, 100F | in prep |
| 008007-45-2 | Coal-tar distillation | 1 | 92, 100F | in prep |
| 065996-93-2 | Coal-tar pitch | 1 | 35, Sup 7, 100F | in prep |
| | Coke production | 1 | 92, 100F | in prep |
| 000050-18-0 | Cyclophosphamide | 1 | 26, Sup 7, 100A | in prep |
| 059865-13-3 | Cyclosporine | 1 | 50, 100A | in prep |
| 079217-60-0 | | | | |
| 000056-53-1 | Diethylstilboestrol | 1 | 21, Sup 7, 100A | in prep |
| | Epstein-Barr virus | 1 | 70, 100B | in prep |
| 066733-21-9 | Erionite | 1 | 42, Sup 7, 100C | in prep |
| | Estrogen therapy, postmenopausal | 1 | 72, 100A | in prep |
| | Estrogen-progestogen menopausal therapy (combined) | 1 | 72, 91, 100A | in prep |
| | Estrogen-progestogen oral contraceptives (combined) (NB: There is also convincing evidence in humans that these agents confer a protective effect against cancer in the endometrium and ovary) | 1 | 72, 91, 100A | in prep |
| 000064-17-5 | Ethanol in alcoholic beverages | 1 | 96, 100E | in prep |
| | Ethylene oxide | | | |
| 000075-21-8 | (NB: Overall evaluation upgraded from 2A to 1 based on mechanistic and other relevant data) | 1 | 97, 100F | in prep |
| | Etoposide | | | |
| 033419-42-0 | (NB: Overall evaluation upgraded from 2A to 1 based on mechanistic and other relevant data) | 1 | 76, 100A | in prep |
| 033419-42-0 | | | | |
| 015663-27-1 | Etoposide in combination with cisplatin and bleomycin | 1 | 76, 100A | in prep |
| 011056-06-7 | | | | |
| | Fission products, including strontium-90 | 1 | 100D | in prep |
| 000050-00-0 | Formaldehyde | 1 | 88, 100F | in prep |
| | Haematite mining (underground) | 1 | 1, Sup 7, 100D | in prep |
| | <i>Helicobacter pylori</i> (infection with) | 1 | 61, 100B | in prep |
| | Hepatitis B virus (chronic infection with) | 1 | 59, 100B | in prep |
| | Hepatitis C virus (chronic infection with) | 1 | 59, 100B | in prep |
| | Human immunodeficiency virus type 1 (infection with) | 1 | 67, 100B | in prep |

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| | Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 (NB: The HPV types that have been classified as <i>carcinogenic to humans</i> can differ by an order of magnitude in risk for cervical cancer) | 1 | 64, 90, 100B | in prep |
| | Human T-cell lymphotropic virus type I | 1 | 67, 100B | in prep |
| | Ionizing radiation (all types) | 1 | 100D | in prep |
| | Iron and steel founding (occupational exposure during) | 1 | 34, Sup 7, 100F | in prep |
| | Isopropyl alcohol manufacture using strong acids | 1 | Sup 7, 100F | in prep |
| | Kaposi sarcoma herpesvirus | 1 | 70, 100B | in prep |
| | Leather dust | 1 | 100C | in prep |
| | Magenta production | 1 | 57, 99, 100F | in prep |
| 000148-82-3 | Melphalan | 1 | 9, Sup 7, 100A | in prep |
| 000298-81-7 | Methoxsalen (8-methoxypsoralen) plus ultraviolet A radiation | 1 | 24, Sup 7, 100A | in prep |
| 000101-14-4 | Methylenebis(chloroaniline) (MOCA) (NB: Overall evaluation upgraded from 2B to 1 based on mechanistic and other relevant data) | 1 | 57, 99, 100F | in prep |
| | Mineral oils, untreated or mildly treated | 1 | 33, Sup 7, 100F | in prep |
| | MOPP and other combined chemotherapy including alkylating agents | 1 | Sup 7, 100A | in prep |
| 000091-59-8 | 2-Naphthylamine | 1 | 4, Sup 7, 99, 100F | in prep |
| | Neutron radiation (NB: Overall evaluation upgraded from 2B to 1 with supporting evidence from other relevant data) | 1 | 75, 100D | in prep |
| | Nickel compounds | 1 | 49, 100C | in prep |
| 016543-55-8 | <i>N</i> -Nitrosodimethylamine (NDMA) and 4-(<i>N</i> -Nitrosomethylamino)-1-(3-pyridyl)-1-butanone (NNK) (NB: Overall evaluation upgraded from 2B to 1 based on mechanistic and other relevant data) | 1 | 89, 100E | in prep |
| 064091-91-4 | <i>Opisthorchis viverrini</i> (infection with) | 1 | 61, 100B | in prep |
| | Painter (occupational exposure as a) | 1 | 47, 98, 100F | in prep |
| 057465-28-8 | 3,4,5,3',4'-Pentachlorobiphenyl (PCB-126) (NB: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data) | 1 | 100F | in prep |
| 057117-31-4 | 2,3,4,7,8-Pentachlorodibenzofuran (NB: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data) | 1 | 100F | in prep |
| 000062-44-2 | Phenacetin (NB: Overall evaluation upgraded from 2A to 1 with supporting evidence from other relevant data) | 1 | 24, Sup 7, 100A | in prep |
| | Phenacetin, analgesic mixtures containing | 1 | Sup 7, 100A | in prep |
| | Phosphorus-32, as phosphate | 1 | 78, 100D | in prep |
| 007440-07-5 | Plutonium | 1 | 78, 100D | in prep |
| | Radioiodines, including iodine-131 | 1 | 78, 100D | in prep |

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| | Radionuclides, alpha-particle-emitting, internally deposited (NB: Specific radionuclides for which there is <i>sufficient evidence</i> in humans are also listed individually as Group 1 agents) | 1 | 78, 100D | in prep |
| | Radionuclides, beta-particle-emitting, internally deposited (NB: Specific radionuclides for which there is <i>sufficient evidence</i> in humans are also listed individually as Group 1 agents) | 1 | 78, 100D | in prep |
| 013233-32-4 | Radium-224 and its decay products | 1 | 78, 100D | in prep |
| 013982-63-3 | Radium-226 and its decay products | 1 | 78, 100D | in prep |
| 015262-20-1 | Radium-228 and its decay products | 1 | 78, 100D | in prep |
| 010043-92-2 | Radon-222 and its decay products | 1 | 43, 78, 100D | in prep |
| | Rubber manufacturing industry | 1 | 28, Sup 7, 100F | in prep |
| | Salted fish, Chinese-style | 1 | 56, 100E | in prep |
| | <i>Schistosoma haematobium</i> (infection with) | 1 | 61, 100B | in prep |
| 013909-09-6 | Semustine [1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea, Methyl-CCNU] | 1 | Sup 7, 100A | in prep |
| 068308-34-9 | Shale oils | 1 | 35, Sup 7, 100F | in prep |
| 014808-60-7 | Silica dust, crystalline, in the form of quartz or cristobalite | 1 | 68, 100C | in prep |
| | Solar radiation | 1 | 55, 100D | in prep |
| | Soot (as found in occupational exposure of chimney sweeps) | 1 | 35, Sup 7, 100F | in prep |
| 000505-60-2 | Sulfur mustard | 1 | 9, Sup 7, 100F | in prep |
| 010540-29-1 | Tamoxifen (NB: There is also conclusive evidence that tamoxifen reduces the risk of contralateral breast cancer in breast cancer patients) | 1 | 66, 100A | in prep |
| 001746-01-6 | 2,3,7,8-Tetrachlorodibenzo- <i>para</i> -dioxin | 1 | 69, 100F | in prep |
| 000052-24-4 | Thiopepa | 1 | 50, 100A | in prep |
| 007440-29-1 | Thorium-232 and its decay products | 1 | 78, 100D | in prep |
| | Tobacco, smokeless | 1 | 89, 100E | in prep |
| | Tobacco smoke, second-hand | 1 | 83, 100E | in prep |
| | Tobacco smoking | 1 | 83, 100E | in prep |
| 000095-53-4 | <i>ortho</i> -Toluidine | 1 | 77, 99, 100F | in prep |
| * 000299-75-2 | Treosulfan | 1 | 26, Sup 7, 100A | in prep |
| | Ultraviolet radiation (wavelengths 100-400 nm, encompassing UVA, UVB, and UVC) | 1 | 100D | in prep |
| | Ultraviolet-emitting tanning devices | 1 | 100D | in prep |
| 000075-01-4 | Vinyl chloride | 1 | 97, 100F | in prep |
| | Wood dust | 1 | 62, 100C | in prep |
| | X- and Gamma-Radiation | 1 | 75, 100D | in prep |

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| 023214-92-8 | Adriamycin (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 10, Sup 7 | 1987 |
| | Androgenic (anabolic) steroids | 2A | Sup 7 | 1987 |
| | Art glass, glass containers and pressed ware (manufacture of) | 2A | 58 | 1993 |
| 000320-67-2 | Azacitidine (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 50 | 1990 |
| | Biomass fuel (primarily wood), indoor emissions from household combustion of | 2A | 95 | 2010 |
| 000154-93-8 | Bischloroethyl nitrosourea (BCNU) | 2A | 26, Sup 7 | 1987 |
| 002425-06-1 | Captafol (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 53 | 1991 |
| | Carbon electrode manufacture | 2A | 92 | 2010 |
| 000056-75-7 | Chloramphenicol (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 50 | 1990 |
| 000098-87-3 | alpha-Chlorinated toluenes (benzal chloride, benzotrichloride, benzyl chloride) and benzoyl chloride (combined exposures) | 2A | 29, Sup 7, 71 | 1999 |
| 000098-07-7 | | | | |
| 000100-44-7 | | | | |
| 000098-88-4 | | | | |
| 013010-47-4 | 1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 26, Sup 7 | 1987 |
| 000095-69-2 | 4-Chloro-ortho-toluidine | 2A | 77, 99 | in prep |
| 054749-90-5 | Chlorozotocin (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 50 | 1990 |
| 015663-27-1 | Cisplatin (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 26, Sup 7 | 1987 |
| 007440-48-4 | Cobalt metal with tungsten carbide | 2A | 86 | 2006 |
| 012070-12-1 | | | | |
| 008001-58-9 | Creosotes | 2A | 92 | 2010 |
| 027208-37-3 | Cyclopenta[cd]pyrene (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 92 | 2010 |
| 000053-70-3 | Dibenz[<i>a,h</i>]anthracene (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 92 | 2010 |
| 000191-30-0 | Dibenzo[<i>a,f</i>]pyrene (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 92 | 2010 |
| 000064-67-5 | Diethyl sulfate (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 54, 71 | 1999 |

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| 000055-18-5 | <i>N</i> -Nitrosodiethylamine (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 17, Sup 7 | 1987 |
| 000062-75-9 | <i>N</i> -Nitrosodimethylamine (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 17, Sup 7 | 1987 |
| | Non-arsenical insecticides (occupational exposures in spraying and application of) | 2A | 53 | 1991 |
| | Petroleum refining (occupational exposures in) | 2A | 45 | 1989 |
| 001336-36-3 | Polychlorinated biphenyls | 2A | 18, Sup 7 | 1987 |
| 000366-70-1 | Procarbazine hydrochloride (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 26, Sup 7 | 1987 |
| | Shiftwork that involves circadian disruption | 2A | 98 | in prep |
| 000096-09-3 | Styrene-7,8-oxide (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 60 | 1994 |
| 029767-20-2 | Teniposide (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 76 | 2000 |
| 000127-18-4 | Tetrachloroethylene (Perchloroethylene) | 2A | 63 | 1995 |
| 000079-01-6 | Trichloroethylene | 2A | 63 | 1995 |
| 000096-18-4 | 1,2,3-Trichloropropane | 2A | 63 | 1995 |
| 000126-72-7 | Tris(2,3-dibromopropyl) phosphate (NB: Overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data) | 2A | 20, Sup 7, 71 | 1999 |
| 000593-60-2 | Vinyl bromide (NB: (1) Overall evaluation upgraded from 2B to 2A based on mechanistic and other relevant data; (2) For practical purposes, vinyl bromide should be considered to act similarly to the human carcinogen vinyl chloride.) | 2A | 39, Sup 7, 71, 97 | 2008 |
| 000075-02-5 | Vinyl fluoride (NB: (1) Overall evaluation upgraded from 2B to 2A based on mechanistic and other relevant data; (2) For practical purposes, vinyl fluoride should be considered to act similarly to the human carcinogen vinyl chloride.) | 2A | 63, 97 | 2008 |

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