The Wides database - How to procure safer disinfectants

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Workshop

Sostenibilità in Sanità:
Acquisti pubblici, Energia e Mobilità nel Sistema Sanitario Italiano e in Europa

Sustainability in healthcare sector:
Public Procurement, Energy and Mobility in the Italian health system and beyond

7 November 2014
ÖkoKauf Wien (Ecobuy Vienna) - Programme for Green Public Procurement

• In 1998 the Vienna City Administration decided to purchase ALL its goods and services according to ecological considerations. For this purpose the programme „ÖkoKauf Wien“ was implemented. (Vienna´s Budget: 5 billion Euros per year)

• All Results, as eco-criteria lists, position papers and Web tools are published on the website: http://www.oekokauf.wien.at

• By executive decree, these criteria lists are binding for all departments of the Vienna City Administration.
The Structure of „Ecobuy Vienna“

“ÖkoKauf Wien” at a glance

Environmentally friendly procurement

**Chief Executive Director of the Vienna City Administration**
Director General of Urban Planning and Development

**Project Director**

**International Activities Department**

**Consultative Committee on Law**

**Consultative Committee on Public Relations**

**Steering Group**
- Climatic Protection - Environmental Protection
- Urban Planning and Development
- Waste Disposal
- Finance
- Kindergartens
- Hospitals and Care Residences
- Public Procurement
- Vehicle Fleet
- Construction
- Building Management
- Vienna Ombuds-Office for Environmental Protection
- Residential Management

**WG 01** Lighting
**WG 02** Disinfection
**WG 03** Printing, Paper and Office Supplies
**WG 04** Electrical Office Equipment and Household Appliances
**WG 05** Vehicle Fleet
**WG 06** Technical Services
**WG 07** Building Construction
**WG 08** Interior Decoration
**WG 09** Food and Drink

**WG 10** Cleaning Agents
**WG 11** Public Works
**WG 12** Water Services
**WG 13** Winter Services
**WG 14** Prevention
**WG 15** Planning
**WG 16** Events
**WG 17** Paints and Varnishes
**WG 18** Fire Extinguishing Equipment
**WG 19** Furniture
**WG 20** Textiles
**WG 21** Disposal Services
**WG 22** Construction Site Environmental Logistics
**WG 23** Nanotechnology
**WG 24** Kindergartens
**WG 25** Green and Open Spaces

**Partner Programmes:**
- Vienna Climatic Protection Programme („KLP Wien“)
- Programme Environmental Management in the Municipality of Vienna („PUMA“)
- EcoBusinessPlan Vienna

“ÖkoKauf Wien”
Think Green — Buy Green
Participants of the Working Group „Disinfection“ in 1998

The Vienna Hospitals Association uses more than 400 tons of disinfectants per year.
Disinfectants protect people’s health against infections,

**BUT their Cell Killing Properties also**

Stress waste water plants and harm the aquatic life in surface waters.

An investigation of Austrian rivers found surprisingly high concentrations of quaternary ammonium compounds (QAC) widely used as disinfectants. A QAC-derived risk to sensitive aquatic organisms could not be excluded.

Can lead to skin degreasing and irritation, allergic contact eczemas, allergic asthma or eye conjunctivitis.

A French study found that 20% of all occupational dermatology consultations were initiated by patients exposed to disinfectants, and detergents in the workplace.

The aim of the working group for "Disinfectants" was **SUBSTITUTION** to **reduce possible risks** of disinfection measures to health and the environment **to a minimum** by carefully **selecting disinfectants with a low hazard potential**.

**BUT** a lot of disinfectants are sold as concentrates. Depending on the specific application the dilution rate changes and also differs between the products.

That's why the information in **Safety Data Sheets do not provide enough basis to carry out comparisons of the diluted products “ready to use”**.
The WIDES is industry-independent, user-friendly and without charge.

It includes

human- and ecotoxicological data on > 200 ingredients of disinfectants, as antimicrobial substances, surfactants, solvents, etc. including source references. (actually of 200 substances)

Data regarding the composition, independently certified spectrum of activity, applications and material compatibility of > 200 disinfectants for surfaces, instruments, laundry, dishes, hands and skin. Mainly from Manufacturers’ data.

An evaluation scheme to compare human- and ecotoxicological properties of the most important disinfectants available on the Austrian market.

www.wides.at and www.wides.at/en
WIDES Assessment of Ingredients

Assigning assessment numbers to corresponding hazards

Ingredient Classifications & hazard statements

- Acute toxicity (respiratory tract)
- Irritation, corrosivity
- Sensitisation, allergenic potential
- Carcinogenicity, mutagenicity, reproductive toxicity, specific target organ toxicity
- Behaviour in surface water
- Behaviour in wastewater treatment plants

No hazard statement, properly characterized
H332, 312, 302, 394 (harmful)
H331, 311, 301 (toxic)
H330, 310, 300 (fatal) or:
H331, 311, 301 with H314 (toxic & causing severe burns)
H330, 310, 300 with H314 (fatal & causing severe burns)

Inconsistent or insufficient data

Glutaraldehyde

Toxic Skin Sen. CMR Water STP
H331 and H314 4 4 3
H314 4 4 4 4
H334 5

H 400
### Comparative Product Assessment

**Algorithm (spreading)**

<table>
<thead>
<tr>
<th>Scores of all ingredients per disinfectant</th>
<th>Final concentration of all ingredients per disinfectant</th>
<th>Dilution of disinfectant for application</th>
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<tr>
<th>Compared disinfectants</th>
<th>Acute toxicity (respiratory tract)</th>
<th>Irritation Corrosivity</th>
<th>Sensitisation Allergenic potential</th>
<th>Carcinogenicity Mutagenicity, Reproductive toxicity</th>
<th>Specific target organ toxicity</th>
<th>Behaviour in surface water</th>
<th>Behaviour in wastewater treatment plants</th>
<th>Flammability (only for flammable products)</th>
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Database Functionalities

Functionalities of the database module „Products“

Legend

- Yellow: Selection button
- Pale blue: Information
- Red: Assessment
- White: Lists

- Individual product information & assessment
- Comparative Product assessment
- Show product overview
- Product
  - Manufacturer
  - Classification as preparation
  - Physical and chemical properties
  - Assessment regarding flammability
  - Spectrum of activity
  - Water hazard class
  - Product components
- List according to search criteria
- Select: exposure time spectrum of activity
- Complete product list

Assessment List according to query criteria
Many disinfectants contain sensitizers (aldehydes, fragrances..).

Study from 2012:
“There is no clear evidence that observing occupational threshold values for respiratory sensitizers (as Glutaraldehyde) is a safe measure to protect against sensitisation.”

Source:

Disinfectants free from allergenic fragrances or other sensitising ingredients represents a precautionary measure for healthcare workers and others.
Example 2 – Exclusion of CMR Properties

Commercially available disinfectants

– may contain ingredients with proven carcinogenic/mutagenic/reprotoxic (CMR) properties if below defined concentration thresholds (for instance boric acid or formaldehyde)

– may contain ingredients which are classified as suspected CMR chemicals (for instance glyoxal)

– may contain often ingredients which are not consistently tested in respect to their CMR properties

– may contain ingredients which are suspected to show endocrine activity (for instance o-phenylphenole)
Creating a Viennese List of Recommended Disinfectants with WIDES

Analysis showed that all chemicals with allergenic, toxic, teratogenic, potentially carcinogenic, persistent and very ecotoxic properties could be phased out of routine disinfection of surfaces, instruments and hands by using the recommended disinfectants.
Who uses the WIDES?

**Its use is binding**
for the Vienna Hospital Association,
for Austrian Hotels and Restaurants with the Austrian Ecolabel.
for Kindergartens and Schools of the City of Vienna
for Austrian Hospitals to identify hand disinfectants, which can be used by pregnant employees (demanded by the Austrian Labour Inspectorate)

**Its use is recommended**
by the Austrian Action Plan für Sustainable Procurement Health Care without Harm,
WHO und ILO
Thank you for your interest!

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Vienna Ombuds Office for Environmental Protection

German Website www.wides.at

English Website www.wides.at/en
Vienna Waste Management Act

§ 10

(1) The city of Vienna is obliged .... to procure those products from the market supply, that minimize adverse impacts on the environment during production, use and disposal.

(2) As an institution of private law the city of Vienna has ....... to support those companies on the market, that produce/sell products which cause less dangerous waste in relation to similar products. .

(Translated from German by the Speaker)
§ 7 Principles of Prevention

The City as Employer has to implement the following general principles of prevention:

1. Prevention of risks
2. Evaluating the risks, that cannot be avoided
6. Elimination or reduction of hazards;
9. Issue appropriate instructions to the staff

These principles has to be used by designing workplaces, jobs and operations,
in the selection and use of work equipment and agents
in the use of staff as well as on any action taken to protect the staff
Avoiding disinfectants with sensitising properties

WIDES database provides special features to avoid products with sensitising ingredients:

In the module *Assessed ingredients* select: *Allergenic fragrances*
- all the products containing fragrances with sensitising potential will be listed

In the module *Products* re-rank the product assessment grid by *Allergenic potential*
- The least hazardous product(s) will be at the top and the most hazardous at the bottom of the grid.
- In the column “Active ingredient basis” the user can additionally
  » check if the product is free of active ingredients with sensitising properties
  » check for the absence of question marks which indicates that all ingredients have been assessed in terms of sensitising potential
Assessment issue - exclusion of CMR properties

- Using WIDES to protect pregnant employees in the healthcare sector

Re-Rank products in the product assessment grid by *Carcinogenicity; Mutagenicity; Reproductive Toxicity; Specific target organ toxicity*

- In the column *Active ingredient basis* you can check if the product is free of ingredients with CMR properties
- The absence of question marks indicates that all product ingredients have been assessed in this respect.
  » In case of (a) question mark(s) the product contains ingredients which are not consistently tested and why CMR properties *cannot be excluded* on the basis of toxicity testing.

On behalf of the Austrian Labour Inspectorate the WIDES operators have created a list of hand disinfectants which can be recommended for hand disinfection by pregnant employees.