



SUBSTITUTIE, MAAR HOE DAN?

Jos J.J. de Lange- 7.11.2019

Bijeenkomst 'Veilig Werken met [Chroom-6], Spijkenisse

KENNISMAKING

- Waarom bij deze expertsessie?
- Heeft u al ervaring met substitutie?
- Of juist een wens?



DE FEITEN

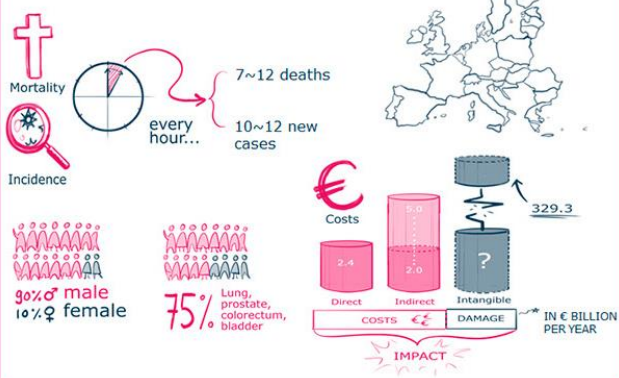
Ieder jaar sterven in Europa 100.000 mensen doordat ze op het werk zijn blootgesteld aan kankerverwekkende stoffen.

- 7-12 doden per uur
- 10-12 nieuwe kankerdiagnoses per uur

It is not just a problem of the past!



Numbers and figures about work-related cancer caused by carcinogenic substances in the EU



ACTIE: 3 (NIEUWE) INITIATIEVEN

- Formeel: OEL's
- Informeel: Hulp aan bedrijven middels de Roadmap
- Bewustwording: Europese campagne



NIEUWE EUROPESE GRENSWAARDEN VOOR KANKER-VERWEKKENDE STOFFEN!

Proces ingezet in 2016

Worden in 'waves' onderzocht, voorgesteld en onderhandeld; 3 waves voltooid (25 stoffen)

Inzet nieuwe Europese Commissie?



HET MOMENTUM

Nederlandse conferentie 2016
'Preventing work-related cancer':

- Noodzaak tot meer ambitie
- Start van een nieuw initiatief: de "Roadmap on Carcinogens"

"Een vrijwillig actieprogramma gericht op bewustwording en de uitwisseling van oplossingen en goede praktijken"



CAMPAGNES



Healthy Workplaces Campaign 2018-19

Manage dangerous substances in the workplace



ROADMAP
ON CARCINOGENS



STOP

SUBSTITUTIE

- Vervang gevaarlijke stoffen door minder gevaarlijke.
- Substitutie is altijd de eerste maatregel die onderzocht moet worden.



ROADMAP
ON CARCINOGENS

HULP VOOR BEDRIJVEN

ROADMAP ON CARCINOGENS

Safety and health at work is everyone's concern. It's good for you. It's good for business.



Healthy Workplaces
MANAGE
DANGEROUS
SUBSTANCES



Substitution of dangerous substances in the workplace

Key Points

- Exposure to dangerous substances in the workplace continues to be a major safety and health issue. The health effects can be life-changing and even fatal.
- The best way to reduce the risks is elimination or substitution — removing the substance by changing the process or product in which it is used or replacing it with a less dangerous one.
- Substitution is a stepwise process — a complete risk assessment is a key step in the process.
- By working together, management and workers can build a strong risk prevention culture in which substitution is part of prevention and protection routines.

All info sheets and other campaign materials are available to download from EU-OSHA's Healthy Workplaces Campaign website (<https://healthy-workplaces.eu/>)

Healthy Workplaces Manage Dangerous Substances

The European Agency for Safety and Health at Work (EU-OSHA) is running a Europe-wide campaign from 2018 to 2020 to promote the prevention of risks from dangerous substances in workplaces. The aim is to reduce the presence of and exposure to dangerous substances in workplaces by raising awareness of the risks and of effective ways of preventing them.

The issue

Despite comprehensive EU legislation having been designed to control and reduce occupational exposure to dangerous substances, they continue to be a major safety and health issue.

The effects of exposure to dangerous substances range from temporary and mild health impairments, such as skin irritation, to severe acute and chronic diseases, such as lung obstruction, and potentially fatal diseases, such as asbestosis and cancer. A number of dangerous substances are also inflammable or explosive, posing additional safety risks. Furthermore, some substances have acute toxic and fatal effects, e.g. gases that develop from waste water or gases that leak from cooling systems.

Taking action

Risk assessment is the key to managing the hazards posed by dangerous substances. Working together and sharing responsibility will create a good culture of risk prevention in the workplace.

The benefits

- improved immediate and long-term health of the workers exposed to the dangerous substance. This can significantly lower sickness absence;
- less dangerous substances cause, in general, reduced costs for waste disposal, effluents into the sewage system or emissions into the air, depending less on control measures, personal protective equipment and/or health surveillance;
- easier compliance with legislation;
- saving cost on fire and explosion protection;
- often lower consumption of the chemicals, which generates more cost savings;
- better reputation, internally and externally, to customers and consumers.

Useful links for hazard identification

- ECHA** (European Chemical Agency) provides information on hazardous properties, classification and labelling, and safe use of chemicals: <https://echa.europa.eu/information-on-chemicals>
- REACTOx** is a database on the health and environmental risks posed by chemicals: <https://www.ehpa.org/Topics/Health-Safety/Chemicals-and-REACTOx-database>
- Haz-Map** is a US database on the health effects of exposure to chemical and biological agents for different work tasks and occupations: <https://hazmap.nlm.nih.gov/>



EXAMPLE

Elimination of welding by pipe pressing

Welding and soldering of pipes releases fumes containing a number of dangerous substances. Welders are also exposed to intense heat and light, considerable noise and risk of fire. However, welding and soldering of pipes can be partly avoided by joining the pipes under high pressure (above). This eliminates the dangerous substances caused by welding. The technique is also quick and easy to apply, which is a key success factor.

Elimination and substitution in principle: STOP

- The Chemical Agents Directive (CAD) of the EU recommends following a hierarchy or 'order of priority' of control measures to prevent or reduce exposure to dangerous substances. A complete elimination is at the top, followed by the rest of the hierarchy:
 - S = Substitution** — complete elimination of the dangerous substance or substitution with a safer alternative
 - T = Technological measures** — minimising the concentration of dangerous substance in the exposure zone
 - O = Organisational measures** — minimising the number of exposed workers and/or the duration and intensity of exposure
 - P = Personal protective equipment** — wearing protective clothing or equipment such as goggles and gloves as a barrier to exposure
- For more details, see the info sheet on legislation covering dangerous substances in the workplace.

EU-OSHA 'S GOEDE PRAKTIJKEN COMPETITIE

NL-winnaar: Akkerbouwer
Mansholt met 'Pak stof aan'

Healthy Workplaces Good Practice Awards 2018-2019

Reducing worker exposure to harmful dust in the arable farming sector



ORGANISATION/COMPANY
Mansholt BV in collaboration with Stigas

COUNTRY
Netherlands

SECTOR
Agriculture

TASKS
Potato handling in arable farming



Healthy Workplaces Good Practice Awards 2018-2019
Awarded and commended examples



HULP AAN BEDRIJVEN: OPLOSSINGEN

Een breed spectrum aan:

- Oplossingen
- Goede Praktijken
- Aanpakken om blootstelling te voorkomen

Ook om te inspireren en duidelijk te maken dat het daadwerkelijk mogelijk is om te acteren!

Actueel 82 gepubliceerd (en groeiend) – Oktober 2019



ROADMAP
ON CARCINOGENS

NEWS ABOUT FRIENDS EVENTS SOLUTIONS FACTS [JOIN ME](#)

OVERVIEW OF GOOD PRACTICES

GOOD PRACTICES

Katrin Arthaber, Labour Inspectorate

HOW THE GENERAL SITUATION CAN BE IMPROVED BY SEVERAL SINGLE MEASUREMENTS

Team Styria is one of the biggest Austrian sheltered employers with about 380 employees, among whom 70% are disabled. The site in Kapfenberg/Styria alone has...

[Read more](#)

📍 Austria

Marek Konstańcaak, Production Manager, Barlinek Inwestycje Sp. z o.o.

ELIMINATION OF RISKS ARISING FROM EXPOSURE TO CHEMICAL SUBSTANCES AND REDUCTION OF EXPOSURE TO WOOD DUST AND NOISE IN THE TIMBER INDUSTRY

Barlinek S.A. produces domestic and exotic wood flooring products. Roughly 1400 people are employed in this timber company. In 2000, it launched a programme to...

[Read more](#)

📍 Poland 🏭 Manufacturing

Jyrki Tiihonen, Kilto Oy

CONTROLLING WORKER EXPOSURE TO CHEMICALS DURING ADHESIVE MANUFACTURING

Kilto Oy develops and manufactures adhesives and related products and systems for all kinds of construction, renovation, and industrial purposes and produces cleaning chemicals. Kilto uses numerous...

[Read more](#)

FILTER

All substances

All professions

All sector/branches

All solution types

All countries

SHARE
YOUR GOOD
PRACTICE

ADD SOLUTION

ENKELE VOORBEELDEN

ROADMAP IN CARCINOGENS

NEWS ABOUT FRIENDS EVENTS SOLUTIONS FACTS JOIN IN

SOLUTIONS

SUBSPORT - SUBSTITUTION SUPPORT PORTAL

OVERVIEW

CONTACT
By: Henk Schreurs, Peter Conix

COUNTRY
Germany

SUBSTANCES
- Chloroalkanes
- Chloroalkenes
- Hexachlorocyclopentadiene
- Hexachlorocyclopentadiene
- Lead
- Hexachloro-A
- Chloroethane

SOLUTION TYPES
- 1, 5 - Substitution
- 2, 1 - Technical measurements

Intro and problem setting

In order to eliminate the risk of the exposure to hazardous substances, substitution of these hazardous chemicals is needed. However, finding a safer substitute without professional help can be a challenging task.

Solution

The Substitution Support Portal (SUBSPORT) is a portal for anyone interested in substituting hazardous chemicals. Companies wanting to fulfil substitution requirements under the legislation can find support in the portal, as well as stakeholders such as authorities, environmental and consumer organisations, and scientific institutions. Substances mentioned in the portal are pre-evaluated regarding hazards according to SUBSPORT methodology which includes a check of the Substitution Database according to SUBSPORT Screening Criteria. The portal is free of charge, multilingual and gives place to a platform for information exchange on alternative substances and technologies. It also provides tools and guidance for substance evaluation and substitution management.

Results

The portal has a growing Case Story Database that provides substitution examples as well as information on alternative substances and technologies from enterprises, published reports and other sources. Almost 60% of the cases are recorded in French, German, Spanish and Serbian. Six main groups of substances of high concern

SUBSPORT

MOVING TOWARDS SAFER ALTERNATIVES

WELCOME TO SUBSPORT THE SUBSTITUTION SUPPORT PORTAL

Here you can find information to support your efforts in substituting hazardous substances. Enjoy exploring the portal and please do not hesitate to **contact** the project team for any comments or questions.

SUBSPORT is an ongoing project. Therefore we recommend to revisit the portal from time to time if you could not yet find the information you expected.

Search SUBSPORT

Website
 Restricted and priority substances database - IRL
 Case story database - IRL

Search

Your contribution

Provide substitution examples
 Provide feedback

Training

Alternatives identification and assessment

Support for Substitution

Substitution of hazardous chemicals is a fundamental measure to reduce risks to environment, workers, consumers and public health.

Legislation encourages you to substitute, the site will show you how.

Read more

Latest News

GreenScreen® is 10 years old!
 Publications & tools | 31.03.2017

GreenScreen® for Safer Chemicals was launched in 2007 and has become a widely recognised tool for assessing chemical hazards, identifying chemicals of concern, and selecting safer chemicals. It is a method of comparative Chemical Hazard Assessment that can be used for identifying chemicals of high concern and safer alternatives.

Read more

Substitution Steps

Substitution may be fast and easy or a more complex process. Generally it includes the following steps:

1. Define the problem
2. Set substitution criteria
3. Search for alternatives
4. Assess and compare alternatives
5. Experiment or pilot
6. Implement and improve

Read more



ROADMAP IN CARCINOGENS

NEWS ABOUT FRIENDS EVENTS SOLUTIONS FACTS JOIN IN

SOLUTIONS

RESPIRABLE CRYSTALLINE SILICA ON CONSTRUCTION SITES

OVERVIEW

CONTACT
SILIC CHEMEX Working Group
SILIC - Senior Labour Inspectors Committee
Contact

COUNTRY
Europe

SUBSTANCES
- Silica

SECTOR / BRANCHE
- Construction

SOLUTION TYPES
- 1, 5 - Substitution
- 2, 1 - Technical measurements
- 3, 0 - Organizational measurements
- 4, P - Personal protection

The European Commission's Senior Labour Inspectors' Committee (SLIC) launched its Guidance for National Labour Inspectors on Thursday 27 October 2016 in The Hague, the Netherlands. Its purpose is to help Labour Inspectors address the risks workers face when they are exposed to respirable crystalline silica (RCS) on construction sites.

The document, developed by SLIC's working group on chemicals, CHEMEX, includes sections on why RCS is a health risk, the EU regulatory framework and practical information. This includes the hierarchy of control plus important examples of relevant control measures. Together with 14 task sheets it focuses on the highest priority RCS risks on construction sites. In putting together this guidance the working group considered the practices of hundreds of inspectors from the 28 member states of the European Union.

Further information

HULP BIJ SUBSTITUTIE - BRONNEN

- Sectoren en branches (nationaal en europees!)
- RIVM
- TNO
- Arbeidshygenisten
- OSHWIKI - Substitution of hazardous chemicals: oshwiki.eu/wiki/Substitution_of_hazardous_chemicals
- EU-OSHA - Dangerous Substances: osha.europa.eu/en/themes/dangerous-substances
- ECHA - Strategy to promote substitution to safer chemicals through innovation: echa.europa.eu
- Roadmap on Carcinogens: www.roadmaponcarcinogens.eu
- Subsport - substitution portal: www.subsportplus.eu
- WIDES - Database for Choosing Disinfectants: www.wien.gv.at/english/environment/protection/oekokauf/disinfectants/



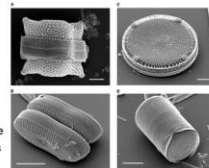
Nieuw alternatief voor chroom-6: algenskeletten

Auteur: Renée Canrinus-Moezelaar | 6 februari 2019



Chroom-6 vormt grote gevaren voor de gezondheid, dus zoeken wetenschappers hard naar alternatieven. Onderzoekers aan de TU Delft ontwikkelden een heel nieuwe oplossing op basis van algenskeletten.

De onrust rondom chroom-6 lijkt maar niet te stoppen. Een



Vershillende structuren van de algensoort diatomeeën, ook wel kiezelwieren genoemd.

Wikimedia Commons, Mary Ann Tiffany, San Diego State University via CC BY 2.5

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inen. De
n zat, is
n kan

aan-
n corrosie –
aan-
tastings van het oppervlak door lucht of water. De fabrikanten laten de metalen reageren met chroom-6, zodat een beschermend laagje ontstaat dat ervoor zorgt dat bijvoorbeeld ijzer niet roest en koper niet groen uitslaat. "Goede alternatieven zijn schaars", zegt Santiago Garcia, universitair hoofddocent zelfhelende polymeren aan de faculteit Luchtvaart- en Ruimtevaarttechniek aan de TU Delft. "We gebruiken niet voor niets al honderd jaar chroom-6, ondanks de risico's." Gelukkig vonden Garcia en zijn collega's onlangs een veelbelovende nieuwe oplossing: algenskeletten.

Holle containers

De algenskeletten die Garcia en promovendus Paul Denissen gebruiken, komen van diatomeeën of kiezelwieren, algen die zichzelf omringen met een hard skelet. Garcia hoorde voor het eerst over deze algensoorten op een biologieconferentie: "De skeletten hebben allerlei vormen en maten, maar ze zijn in ieder geval hol. Je kunt er dus iets in stoppen, in ons geval een inhibitor."

DE 'STOP' - ANIMATIE

- Aanpak van werkgerelateerde blootstelling aan kankerverwekkende stoffen.
- Onderdeel van de Oostenrijkse voorzitterschapsconferentie in september 2018.



PREVENT EXPOSURE

We need to prevent exposing our workers to these carcinogens at work.

https://www.youtube.com/watch?v=wRuI-_HfRD4

DE UITNODIGING

Join in: word vriend, sluit je aan en blijf op de hoogte

Get active: organiseer bijeenkomsten of activiteiten en laat je inspireren door die van anderen

Help each other: deel je oplossing, goede praktijk of aanpak!



JOIN IN!

