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Emergency in which hazardous waste is involved

Contents of a company waste management plan

Task/duties of a responsible person for waste storage/treatment plants

Task/duties of a qualified person responsible for waste transport

Vanredne situacije u kojima postoji opasni otpad

Sadržaj plana za upravljanje otpadom kompanije

**Zadaci/obaveze lica odgovornih za skladištenje otpada/postrojenja za
tretman**

**Zadaci/obaveze kvalifikovanih lica koja su odgovorna za transport
otpada**



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

- Incidence during transport
- Incidence at the place of generation/storage/treatment

ADR/waste classification rely on chemical legislation

Hazardous waste ≠ Dangerous good (ADR)

Non hazardous waste which is a dangerous good:

e.g. Li-batteries waste code 16 06 05 – UN 3090, 3091 – class 9

- Udesi tokom transporta
- Udesi na mestu nastanka/skladištenja/tretmana

ADR/klasifikacija otpada se oslanja na zakonodavstvo iz oblasti hemikalija

Opasan otpad ≠ Opasan teret, roba (ADR)

Neopasni otpad koji je opasan teret:

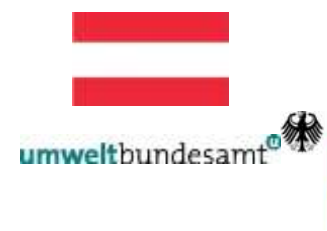
npr. Li-baterije, indeksni broj otpada 16 06 05 – UN 3090, 3091 – klasa 9



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

Emergency during transport

Important is preparation before

- ✓ Contact data to relevant EI (EI for waste management, EI for chemicals and pesticides, EI for protection of soil and water)
- ✓ Available technical assistance (fire brigade, waste management companies, construction companies)

Hitne situacije tokom transporta

Važna je prethodna priprema

- ✓ Kontakt podaci relevantnog inspektora za zžs. (inspektor za upravljanje otpadom, inspektor za hemikalije i pesticide, inspektor za zaštitu zemljišta i vode)
- ✓ Dostupna tehnička pomoć (vatrogasna brigada, kompanije za upravljanje otpadom, građevinske firme)



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

Important is preparation before

- ✓ Possible medical support
- ✓ Police

Priorities

- Identification of hazardous substances (wastes)
- Protection of involved staff
- Mitigation of spill
- Avoidance of secondary effects (e.g. fire, etc.)

Važna je prethodna priprema

- ✓ Moguća medicinska pomoć
- ✓ Policija

Prioriteti

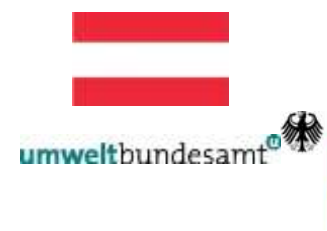
- Identifikacija opasnih supstanci (otpadi)
- Zaštita osoblja koje je uključeno
- Ublažavanje izlivanja
- Izbegavanje sekundarnih efekata (npr. požar, itd...)



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

Emergency at a plant

Large installations :

Will be covered by IPPC and/or SEVESO (transposed by Law on Environmental Protection)

Handling of emergency situations should be part of the license.

- Safety analysis
- Secondary effects (fire water, domino effect)
- Available resources at the plant

Vanredne situacije u postrojenjima

Velike instalacije :

Biće pokriveno IPPC i/ili SEVESO direktivama (koje su transponovane Zakonom o zaštiti životne sredine)

Upravljanje vanrednim situacijama bi trebalo da bude deo dozvole.

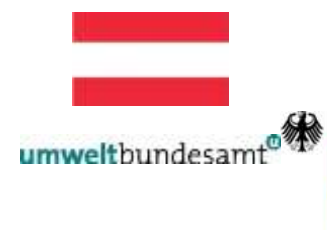
- Aanaliza bezbednosti
- Sekundarni efekti (voda iz gašenja požara, domino efekat)
- Dostupni resursi u postrojenju



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

Emergency at a plant

Small installations

Normally not covered by IPPC and/or SEVESO

Higher request to authorities

- Types of accidents (spillage, fire, etc.)
- Risk for neighbours
- Waste management concept

Vanredne situacije u postrojenjima

Male instalacije

Obično nisu pokrivene IPPC i/ili SEVESO direktivama

Viši zahtev organima

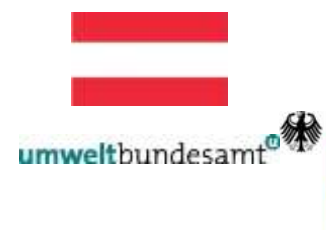
- Vrste akcidenata (prosipanje, vatra, itd...)
- Rizik za okolno stanovništvo i objekte
- Koncept upravljanja otpadom



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

Anticipate which cases of emergency may occur

- Spillage (soil, surface water, groundwater, sewerage)
- Fire
- Evolvement of (toxic) gases
- Injuries of workers/other persons
-

Predvideti koji se vanredni slučajevi mogu dogoditi

- Prosipanje (zemljište, površinske vode, podzemne vode, kanalizacija)
- Požar
- Širenje (toksičnih) gasova
- Povrede radnika/ostale osobe
-



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

Priorities

- Identification of hazardous substances (wastes)
- Protection of involved staff
- Protection of the neighbors
- Mitigation of spill
- Avoidance of secondary effects (e.g. fire, etc.)

Prioriteti

- Identifikacija opasnih supstanci (otpadi)
- Zaštita osoblja koje je uključeno
- Zaštita komšija
- Ublažavanje izlivanja
- Izbegavanje sekundarnih efekata (npr. požar, itd...)



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Emergency in which hazardous waste is involved Vanredne situacije u kojima postoji opasni otpad

After an emergency

- Identify the reason
- Possible ways to avoid a repetition
- Other companies/plants with similar risk profile
-

Nakon vanredne situacije

- Identifikvanje razloga
- Mogući načini da bi se izbeglo ponavljanje
- Ostale kompanije/postrojenja sa sličnim profilom rizika
-



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Contents of a company waste management plan Sadržaj plana za upravljanje otpadom kompanije

Legal basis – Law on Waste Management (“Official Gazette of the RS”, No. 36/09)

Article 15 – IPPC-installations and Article 26 – generator of more than 100 t non-hazardous/200 kg hazardous waste shall prepare a (company) waste management plan

Coverage

- All wastes generated, treated, disposed

Pravni osnov – Zakon o upravljanju otpadom (“Službeni glasnik RS”, Br. 36/09)

Član 15 – IPPC-instalacije i član 26 – generator više od 100 t neopasnog/200 kg opasnog otpada, pripremiće (kompanija) plan za upravljanje otpadom

Pokrivenost

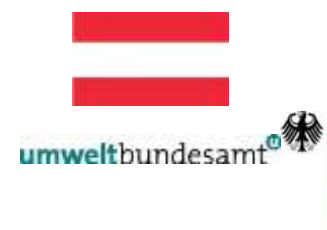
- Sav generisani, tretirani i odložen otpad



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Contents of a company waste management plan

Sadržaj plana za upravljanje otpadom kompanije

Contents

- Measures to reduce waste generation, especially hazardous waste
- Provide for waste separation
- Define the ways of disposal
- Introduce protective measures

The company waste management plan is to be up-dated every 3 years

Sadržaj

- Mere za smanjenje generisanja otpada, posebno opasnog otpada
- Obezbediti separaciju otpada
- Definisati načine odlaganja
- Uvođenje zaštitnih mera

Plan za upravljanje otpadom kompanije treba da se ažurira svake tri godine



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Contents of a company waste management plan Sadržaj plana za upravljanje otpadom kompanije

Company Waste Management Plan – a bureaucratic stipulation or a helpful tool?

A good plan should

- Refer to materials/chemicals used
- Explore alternatives for hazardous substances
- Explore recycling options for wastes
- Give a long term perspective

Plan za upravljanje otpadom kompanije – birokratska odredba ili alat za pomoći?

Dobar plan bi trebalo da

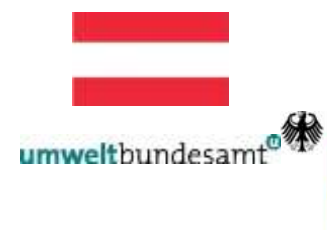
- Se odnosi na materijale/hemikalije koje su korišćene
- Istraži alternative za opasne supstance
- Istraži opcije za reciklažu otpada
- Pruži dugoročnu perspektivu



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Contents of a company waste management plan

Sadržaj plana za upravljanje otpadom kompanije

A good plan should

- Include emergency scenarios

A good plan can

- Reduce costs
- Improve resource utilization
- Reduce environmental impact
- Reduce risk for employees and environment

Dobar plan bi trebalo

- Da uključi scenario vanredne situacije

Dobar plan može

- Da smanji troškove
- Poboljša korišćenje resursa
- Smanji uticaj na životnu sredinu
- Smanji rizik po zaposlene i životnu sredinu



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Contents of a company waste management plan Sadržaj plana za upravljanje otpadom kompanije

Example

Surface treatment of metals
(painting, etc.)

Typical hazardous wastes generated

- Degreasing residues
- Paint sludge

First step would be analysis of the
chemicals/products used – not the
waste generated

Primer

Završna obrada metala (bojenje,
itd...)

Tipičan opasni otpad koji je
generisan

- Odmašćivanje ostataka
- Obojeni mulj/ talog

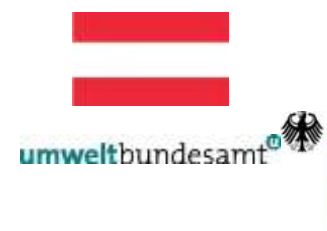
Prvi korak bi bio analiza
hemikalija/proizvoda koji su
korišćeni – ne otpad koji je
generisan



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Contents of a company waste management plan

Sadržaj plana za upravljanje otpadom kompanije

Example

Typical degreasing with solvents

- Emission of VOC (loss of chemicals)
- Generation of a solvent containing sludge (hazardous wastes (11 01 13*))
- Risk of fire/explosions

Alternative degreasing with steam

- Less emissions of VOC

Primer

Tipično odmašćivanje rastvaračima

- Emisija nestabilnih organskih jedinjenja (gubitak hemikalija)
- Generisanje mulja koji sadrži rastvarače (opasni otpadi (11 01 13*))
- Rizik od požara/eksplozija

Alternativno odmašćivanje parom

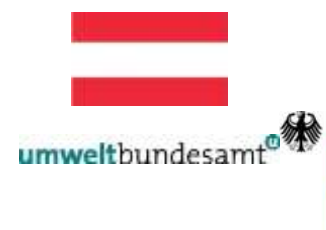
- Manje emisija nestabilnih organskih jedinjenja



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Contents of a company waste management plan Sadržaj plana za upravljanje otpadom kompanije

Example

Alternative degreasing with steam

- Less risk of fire/explosion
- Less risk for employees
- Eventually non hazardous degreasing sludge (11 01 14) – easier to dispose (e.g. by co-incineration)

Primer

Alternativno odmašćivanje parom

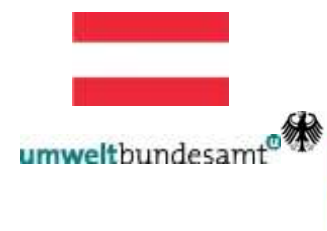
- Manji rizik od požara/eksplozije
- Manji rizik po zaposlene
- Eventualno neopasan otpad od odmašćivanja (11 01 14) – koji se lakše odlagaže (npr. ko-insineracijom)



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Contents of a company waste management plan Sadržaj plana za upravljanje otpadom kompanije

Example

Solvent containing paint

- Emission of VOC
- Generation of a solvent containing sludge (overspray 08 01 13*)
- Risk of fire/explosions

Water based paint

- Less emission of VOC
- Less risk

Primer

Boje koje sadrže rastvarače

- Emisija VOC (isparljivih organskih jedinjenja)
- Generisanje mulja koji sadrži rastvarače (rasprašivači 08 01 13*)
- Rizik od požara/eksplozija

Boje na bazi vode

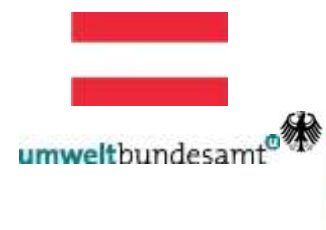
- Manja emisija VOC
- Manji rizik



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Contents of a company waste management plan

Sadržaj plana za upravljanje otpadom kompanije

Example

Water based paint

- Non-hazardous paint sludge (08 01 16)

Change in the work plan

- Generation of mono-sludge which can be recycled

Primer

Boje na bazi vode

- Neopasni mulj koji sadrži boje (08 01 16)

Promene u planu rada

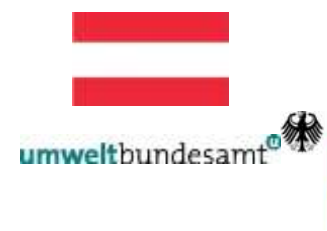
- Generisanje mulja koji se može reciklirati



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Contents of a company waste management plan

Sadržaj plana za upravljanje otpadom kompanije

Necessary steps

Analyze of existing processes

Review of legislation/proposed legislation (will there be a change in short or mid term?)

Information on alternatives (external consultant)

Authority can support this process – benefit for the authority: better preparation for emergencies

Neophodni koraci

Analiza postojećih procesa

Pregled zakonodavstva/predloženo zakonodavstvo (da li će biti izmena u kratkom ili srednjem roku?)

Informacije o alternativama (eksterni konsultant)

Organ može podržati ovaj proces – korist za organ: bolja priprema za vanredne situacije



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Task/duties of a responsible person for waste storage/treatment plants

Zadaci/obaveze odgovornog lica za skladištenje otpada/postrojenje za tretman

Law on Waste Management (“Official Gazette of the RS”, No. 36/09)

Article 29 (30) – the operator of a waste management facilities shall designate a qualified person responsible for all professional activities

These covers i.e.

- Preparation of a (company) waste management plan
- Notification to authorities (SEPA)
- Supervision of the storage and treatment of waste

Zakon o upravljanju otpadom (“Službeni glasnik RS”, Br. 36/09)

Član 29 (30) – operater postrojenja za upravljanje otpadom odrediće kvalifikovano lice odgovorno za profesionalne aktivnosti

Ovo pokriva npr...

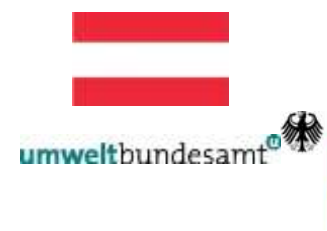
- Pripremu plana za upravljanje otpadom (kompanije)
- Obaveštavanje organa (SEPA)
- Nadzor skladištenja i tretmana otpada



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Task/duties of a responsible person for waste storage/treatment plants

Zadaci/obaveze odgovornog lica za skladištenje otpada/postrojenje za tretman

These covers i.e.

- Record keeping
- Information of the authorities on accidents.

In accordance with Article 88 not only the company but also the designated responsible person can be sued for violation of the law on waste management.

Ovo pokriva npr...

- Vođenje evidencije
- Informisanje organa o akcidentima.

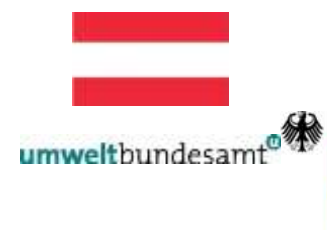
U skladu sa članom 88, ne samo firma, već i odgovorno lice može biti tuženo za kršenje zakona o upravljanju otpadom.



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Task/duties of a responsible person for waste storage/treatment plants

Zadaci/obaveze odgovornog lica za skladištenje otpada/postrojenje za tretman

The responsible person needs

- a knowledge of all applicable law (law on waste management and its by-laws, IPPC law, law on work place safety, etc.) and applicable technical standards.
- technical knowledge with reference to the wastes stored and treated at the plant

Odgovorno lice treba da ima

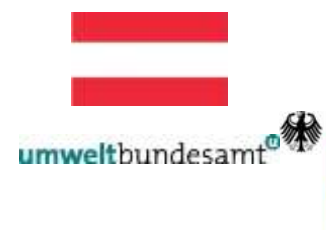
- Znanje o svim zakonima koji se primenjuju (Zakon o upravljanju otpadom i njegova podzakonska akta, Zakon o IPPC, Zakon o bezbednosti na radu itd...) i tehničkim standardima koji se primenjuju.
- Tehničko znanje u vezi sa otpadom koji je skladišten i tretiran u postrojenju



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Task/duties of a responsible person for waste storage/treatment plants

Zadaci/obaveze odgovornog lica za skladištenje otpada/postrojenje za tretman

The necessary technical qualification of the responsible person depends on the wastes stored/treated and the treatment process.

External expertise and permanent further education is necessary (especially in case of complex treatment processes)

Neophodne tehničke kvalifikacije odgovornog lica zavise od otpada koji je skladišten/tretiran i od procesa tretmana.

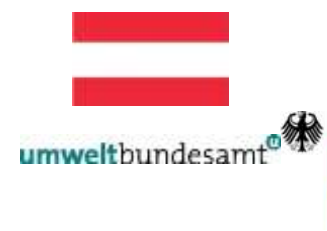
Ekspertiza spolja i stalna dalja edukacija je neophodna (posebno u slučaju kompleksnih procesa tretmana)



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Task/duties of a qualified person responsible for waste transport

Zadaci/obaveze odgovornog lica za transport otpada

No responsible person defined in Article 28 of the LWM – Obligations of Waste Carrier

Reference to ADR (road), RID (train), AND (inland water)

Responsibilities in accordance with UN-RTDG (ADR/RID/AND)

- Shipper (company which provides for the shipping of a commodity acting on itself or for a third person/entity)

Ne postoji definisano odgovorno lice u članu 28 Zakona o upravljanju otpadom – za obaveze prevoznika otpada referentni su ADR (putevi), RID (vozovi), AND (unutrašnje vode)

Odgovornosti u skladu sa UN-RTDG (ADR/RID/AND)

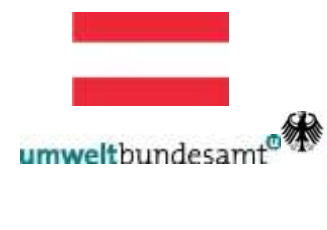
- Prevoznik (kompanija koja obezbeđuje prevoz robe za sebe ili za treće lice)



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Task/duties of a qualified person responsible for waste transport

Zadaci/obaveze odgovornog lica za transport otpada

Responsibilities in accordance with UN-RTDG (ADR/RID/AND)

- Packer (company or person which fills in the dangerous goods into the UN – tested packaging including ICBs)
- Filler (company or person which fills in the dangerous goods into tanks or dangerous goods in bulk)

Odgovornosti u vezi sa UN-RTDG (ADR/RID/AND)

- Paker (kompanija ili lice koje opasnom robom puni UN- testirana pakovanja, uključujući ICBs)
- Punilac (kompanija ili lice koje rezervoare puni opasnom robom ili opasnom robom u rasutom stanju)



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Task/duties of a qualified person responsible for waste transport

Zadaci/obaveze odgovornog lica za transport otpada

All these entities are responsible that

- The packaging complies with the regulation (UN-tested, packaging group, etc.)
- The commodity is proper labelled
- The driver gets the necessary information (accident leaflet)

Svi ovi subjekti su odgovorni za to da

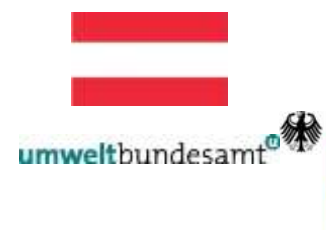
- Ambalaža bude u skladu sa regulativom (UN-testirana, ambalažna grupa, itd...)
- Roba bude pravilno označena
- Vozač dobije neophodne informacije (letak o akcidentima)



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Task/duties of a qualified person responsible for waste transport

Zadaci/obaveze odgovornog lica za transport otpada

The responsible person under the ADR - agreement can be sued for any violation of these provisions (labelling, packaging, providing information).

Main tasks are

- Correct classification in accordance with table A of the ADR agreement
- Correct packaging
- Correct labelling

Odgovorno lice pod ADR sporazumom može biti tužena za bilo koje kršenje ovih odredbi (obeležavanje, pakovanje, pružanje informacija).

Glavni zadaci su

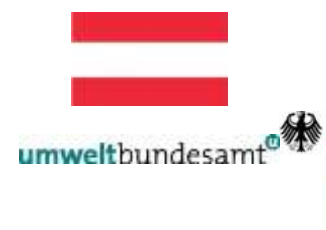
- Ispravna klasifikacija u skladu sa tabelom A iz ADR sporazuma
- Ispravno pakovanje
- Ispravno obeležavanje



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Task/duties of a qualified person responsible for waste transport

Zadaci/obaveze odgovornog lica za transport otpada

ADR and waste legislation are both based mainly on chemical classification.

ADR is focusing on transport and storage – not the full range of chemical hazards covered.

Example:

H4/H8 irritant/corrosive – waste legislation: focus on the effect on skin/eye/tissue

H8 corrosive – ADR: corrosion on steel/aluminum

ADR i zakonodavstvo vezano za otpad su bazirani uglavnom na hemijskoj klasifikaciji.

ADR se fokusira na transport i skladištenje – ne pokriva pun opseg hemijskih opasnosti.

Primer:

H4/H8 iritirajući/korozivan – zakonodavstvo za otpad: fokusira se na dejstvo na kožu/oči/tkiva

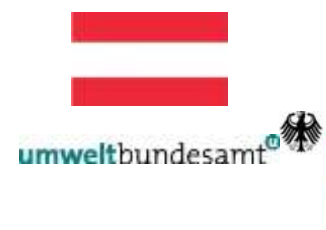
H8 korozivan – ADR: korozija na čeliku/aluminijumu



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Ministry of Agriculture and Environmental Protection



Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit

Task/duties of a qualified person responsible for waste transport

Zadaci/obaveze odgovornog lica za transport otpada

Waste List:

also a “political list”

e.g. 16 06 05 other batteries (including Li-batteries) non hazardous (reference to Basel List)

ADR Li-batteries are dangerous good, Class 9,

UN 3090/3091 Li-metal-batteries and
UN 3480/3481 Li-ion-batteries

Lista otpada:

Takođe “politička lista”

npr. 16 06 05 ostale baterije (uključujući Li-baterije) neopasne (referenca je u Bazelskoj listi)

ADR Li-baterije su opasna roba, klasa 9,
UN 3090/3091 Li-metalne-baterije i
UN 3480/3481 Li-jonske-baterije



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Bau und Reaktorsicherheit

Thank you for your
attention

Hvala vam na pažnji!

Mr. Andreas Moser

Federal Ministry of Agriculture,
Forestry, Environment and Water
Management

<https://www.bmlfuw.gv.at/en/>