Danfoss Negative List – the Grey List

3rd issue, November 2011

Danfoss' Negative List bans or restricts the use of chemical substances in Danfoss' products and production processes and by Danfoss' suppliers, contractors and tenants.

This Negative List shall be complied with throughout the entire Danfoss Group and by all tenants, suppliers and contractors working on Danfoss premises.

Requirements for suppliers, contractors and tenants

Suppliers and subcontractors to Danfoss are required to comply with the Black list and shall on request be able to document the type and amount of any hazardous substances present in materials, subassemblies or components and used in processes.

Suppliers and subcontractors must not supply products, components or materials containing substances on the Black List to Danfoss.

Suppliers and subcontractors must not use any chemicals from the Black List in processes manufacturing parts for Danfoss.

If new substances are put on the Black List, all suppliers and subcontractors must ensure that the new substance is removed from products delivered to Danfoss within a time period not exceeding one year.

Contractors, tenants or their suppliers working on Danfoss' owned property must not bring substances on the Black List onto Danfoss premises.

All suppliers, subcontractors, contractors, tenants or their suppliers working on Danfoss' owned property are responsible for keeping themselves updated with the current version of the Negative List. The Danfoss Negative List in force at any given time is available on:

http://www.danfoss.com/AboutUs/Corporate+Citizenship/NegativeList.htm

On the same webpage Suppliers shall register as recipient of updates to the Danfoss Negative List and remain registered for the term of the co-operation.

The Grey List (restricted substances)

The use of restricted substances shall be avoided wherever possible, or minimized if they cannot be avoided for technical or reliability reasons.

Substances on the Grey List shall, as a general rule, not be introduced when developing new products or processes.

Some restricted substances are allowed for use under specific circumstances but should be phased out, if possible, and replaced with technically and economically acceptable alternatives. The alternative must be environmentally friendlier than the substituted substance.

The entire Grey List is on the following pages.

The Grey List

Group name	Substance name	Example of occurrence	Comments
Metals	Antimony trioxide	Plastics with halogenated flame retardants	Avoid because of carcinogenic effect
	Beryllium	In electronic components, copper strips and welding electrodes	Avoid because of carcinogenic effect
	Beryllium compounds and alloys		
	Cadmium	Stabilisizers in polymers, Used in pigments in paints and plastics, also present in electronics	Carcinogenic effect and environmentally hazardous
	Cadmium compounds		
	Chromium 6+ compounds	Chromium pigments, chromated surfaces, corrosion inhibitors.	Carcinogenic effect and environmentally hazardous
	Cobalt compounds(dichloride, carbonate, diacetate, dinitrate, sulfate)	Humidity indicator, catalyst	Prioritised for Annex XIV
	Lead	Paints and varnishes, stabilizers in plastic	When released: toxic and neurotoxic effect
	Lead compounds		
	Nickel (except in alloys)	Alloys, batteries, paints, welding materials	When released: toxic, allergenic and carcinogenic effect
	Nickel compounds		
	Radioactive elements	Measuring devices, dischargers	Avoid because of carcinogenic effect
	Selenium	Pigments in plastic, photo electrical coatings, diodes, rectifiers	Toxic effect
	Selenium compounds		
CRAN	Carcinogenic	Cleaning agents, cutting fluid and other chemicals	CRAN evaluation
	Reprotoxic		
	Allergenic		
	Neurotoxic		
Endocrine disruptors (EDC)	Phthalates	Plasticizer	Due to their reprotoxic effect they are a part of the CRAN evaluation
	Parabenes	Preservatives in cosmetics, cleaning agents and food	
	Other endocrine disruptors	e.g. in paints, lacquers and adhesives.	
Organic solvents	2,4 Dinitrotoluene	Used for the production of toluene diisocyanate, used for the polyurethane foams	Recommended for Annex XIV
	Organic compounds that are liquids at 25 °C and have boiling points< 250 °C	In all liquid material like cleaning agents, cutting fluids and plant protection chemicals	Should in general be reduced because of the negative health effect on human and the environmental risk
Plasticisers and monomer	Polyvinylchloride (PVC)	Use as design material. PVC can still be used for insulation on leads and cables if no better alternatives are found	
	Di(heptyl, nonyl, undecyl) phthalate (NHUP); 1,2 Benzenedicarboxylic acid, di C7-11 branched and linear alkyl esters)	Plasticiser in PVC	list Candidate
	Diisoheptyl phthalate (DIHP); 1,2 Benzenedicarboxylic acid, di C6-8-branced alkyl esters, C7-rich)	Plasticiser in PVC and som ink and coatings formulations.	list Candidate
	Diisobutyl phtalate (DIBP)	Used for plastics, lacquers, adhesives	Recommended for Annex XIV
Flame retardants	Polybrominated biphenyls		Banned in electric and electronic parts
	Polybrominated diphenylethers		

Group name	Substance name	Example of occurrence	Comments
Perfumes	d-Limonene	Occurrence is normally in cleaning agents, but can be present in all liquids	CRAN due to the allergenic effect.
	Linalool		
	Cinnamaldehyde (alpha-hexyl)		
	Eugenol		
	Benzyl Benzoate		
	Benzyl alcohol		
	Salicylic, benzyl-ester		
	Geraniol		
	Citronellol		
	Coumarin		
	Cinnamaldehyd, alpha-pentyl		
	Citral		
	Hydroxycitronellal		
	Isoeugenol		
	Benzyl cinnamate		
	Methyl heptin carbonat		
	Cinnamaldehyd		
	Amylcinnamyl alcohol		
Harde-ners	TGIC	In powder paint	
Methacry-lates and acrylates	Ethylacrylates	Used typically in glues and adhesives	
	Methylacrylates		
Epoxy and iso-cyanate resins (PUR)	Bisphenol A-diglycidyl ether	Open spray applications based on these substances are in banned in DK general	
	MDI (-diphenylmethane-4,4'-diisocyanate)		
	MDI (-diphenylmethane-2,4'-diisocyanate)		
	MDI (-diphenylmethane-2,2'-diisocyanate)		
	TDI (toluen-2,4-diisocyanate)		
	TDI (toluen-2,6-diisocyanate)		
Rubber chemicals	Aminobiphenyl (4-) + salts	Dye	
	Benzidine + salts	Dye	
	Thiocarbamide	Plastics & Rubber	
	PAH	Rubber	
REACH	The Candidate list	CMR (Carcinogenic, Mutagenic, Reproduction toxic) category 1 and 2. Toxic to the environment (N, R50/53). Endocrine disruptors (hormonally active agents)	Substances should be observed as they can end up on the Black list due to Annex XIV list
Lubricants	CRAN-Substances, other than stated on the black list		New products must not contain any CRAN substances
	Boric acid and borates		
	Chlorinated paraffins (other than C10-C13)		
	Environmentally harmful substances (Classified with 'N' in Europe) other than stated on the Black list		
	Other substances that might inhibit or reduce microbial growth		
	VOC´s (Volatile organic compounds)		
Boric acid and borates	Boric acid and borates	Flux, cleaning agents and cutting fluid	Reprotoxic and toxic effect. CRAN due to the reprotoxic effect.

Text highlighted in yellow are updates from the 2nd issue