SAFETY DATA SHEET

In accordance with Annex I, Directive No. 453/2010/ES

development chemical technologies

Name: Reflow Cleaner 94

Issue Date: 03/10/2013 **Page:** 1
Revision Date: **No. of Pages: 5**
Revision No:

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier
Name: Reflow Cleaner 94

1.2 Relevant identified uses of the substance or mixture and uses advised against
Intended for professional and consumer use as cleaning preparation for the electrotechnical industry.

1.3 Details of the supplier of the safety data sheet
Producer: DCT Czech s.r.o.
Tovární 85
CZ-679 21 Černá Hora
www.dctchemicals.com
Tel.: +420 515 539 762 available on business days from 7:00 am to 3:00 pm
e-mail: info@dctchemicals.com

1.4 Emergency Telephone Number:
Toxicological Information Centre: Na Bojišti 1, CZ-120 00 Praha 2
Tel.: +420 224 919 2 93 or +420 224 915 402 - available non-stop

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification pursuant to Regulation No. **1272/2008/EC**
The mixture is classified as
Eye Irrit. 2 (Causes serious eye irritation., category 2) H319
Skin Irr. 2 (Causes skin irritation., category 2) H315

2.2 Label elements
The mixture must be in accordance with Regulation 1272/2008/EC marked as follows:
Marking with warning symbol:

Signal word**: Warning**

Label information: **Contains ethanolamine**

H-sentences: **H319 Causes serious eye irritation.**
H315 Irritant to the skin.

P-sentences: **P262 Avoid contact with skin.**
P271 Use only outdoors or in a well-ventilated area.
P305+P351 IF IN EYES: Rinse cautiously with water for several minutes.
P309+313 IF exposed or if you feel unwell: Get medical advice/attention.

2.3 Other hazards
The product may cause irritation to the eyes and skin.
The product may have adverse effects on aquatic organisms and the overall aquatic environment.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

3.2 a) Classification of hazardous components pursuant to Regulation No. 1272/2008/EC (CLP)

Name of the hazardous component	Content in %	Index No.	Reg. No.	Classification Category	H-sentences *)	Signal word	Warning symbol
2-aminoethan-1-ol (ethanolamine)	< 4,8	603-030-00-8		Acute Tox. 4 * Skin Corr. 1B	H332 H312 H302 H314	Warning	GHS 05 GHS 07
2-butoxylethan-1-ol (butylcelosolv)	< 4	603-014-00-0		Acute tox.4* Eye Irrit. 2 Skin Irrit. 2	H332 H312 H302 H319 H315	Warning	GHS07
3-butoxypropan-2-ol	< 4	603-052-00-8		Eye Irrit. 2 Skin Irrit. 2	H319 H315	Warning	GHS07

***)** Note: For full wording of H-sentences see Point 16 of the Safety Data Sheet

b) Classification of hazardous components pursuant to Directive No. 67/548/EEC

Name of hazardous component	Content in %	Reg. No.	ES No.	CAS No.	Classification and R-sentences *)	Concentration Limits
2-aminoethan-1-ol (ethanolamine)	< 4,8		205-483-3	141-43-5	C R 34 Xn R 20/21/22	5 <= c<10% Xi R36/37/38 c ≥ 25%
2-butoxylethan-1-ol (butylcelosolv)	< 4		203-905-0	111-76-2	Xn R 20/21/22 Xi R 36/38	c ≥ 25% c ≥ 20%
3-butoxypropan-2-ol	< 4		225-878-4	5131-66-8	Xi R 36/38	c ≥ 20%

***)** Note: For full wording of R-sentences see Point 16 of the Safety Data Sheet

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures
When inhaled: move the afflicted to the fresh air, keep him calm, prevent hypothermia.
Contaminated skin: remove the contaminated dress and rinse off the skin with warm water and soap.
If ingested: rinse mouth and drink a pint of cold drinking water, do not induce vomiting, seek medical attention immediately.
Contaminated eyes: rinse off the affected eye wide open from the inner corner to the outer one and also under the lids with water, find medical advice if irritation lasts.
4.2. Most important symptoms and effects, both acute and delayed
Irritated eyes, headache, difficulty in breathing.
4.3. Indication of any immediate medical attention and special treatment needed
In case of health troubles, in case of doubts and if swallowed accidentally, please always contact the physician and provide him with information from this Safety Data Sheet.

SECTION 5: FIREFIGHTING MEASURES

5.1.Extinguishing media
Suitable extinctants: by burning materials in the vicinity of - the mixture itself is not flammable.
5.2 Special hazards arising from the substance or mixture
During the fire, toxic combustion products may develop.
5.3. Advice for firefighters
Use protective clothing and breathing apparatuses. Prevent the leakages of fire-extinguishing water into the environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment - protective clothing, goggles and gloves. Secure outlet of vapours and admission of fresh air in closed rooms.
6.2 Environmental precautions
Prevent leaks to the environment.
6.3 Methods and material for containment and cleaning up
Larger quantities or vacuum pump into a suitable container, leave the rest absorbed by a suitable sorbent / vapex, sand / and store in a container for disposal as hazardous waste. When intervention measures to comply with fire.
6.4 Reference to other Sections
None.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
With a sealed envelope to carefully handle and push it open. Avoid contact with skin and the eyes. Use only in well-ventilated rooms with secured outlet of vapours and admission of fresh air.
7.2 Conditions for safe storage, including any incompatibilities
Store in sealed containers in well-ventilated rooms at temperatures from 5 to 25°C.
7.3 Specific end use(s)
Cleaning preparation for electrotechnical industry.

SECTION 8: EXPOSURE CONTROLS /PERSONAL PROTECTION

8.1 Control parameters
The product contains the following substances for which the following allowable exposition limits (AELs) and highest allowable concentrations (HACs) of chemical substances in the work environment air are stipulated.

name	content in %	CAS No.	AELs mg/m^3	HACs mg/m^3	Conversion factor to ppm	Note
ethanolamin	< 5	141-43-5	2,5	7,5	0,401	-
2-butoxyethan-1-ol	< 4	111-76-2	100	200	0,207	D,I
3-butoxypropan-2-ol	< 4	51 31-66-8	270	550	0,185	D,I

Note: D - Upon exposure the substance significantly permeates the skin.
I - Irritating to mucous membranes (eyes, respiratory system) resp. skin.

8.2 Exposure controls
8.2.1 Reduction of employees exposure
General safety and hygienic measures: Avoid contact with skin and eyes. Wear suitable protective clothing, gloves and goggles or face shield. Use only in well-ventilated areas with a secure supply of fresh air.
Respiratory protection: when exceeding the PEL mask with filter against aerosols.
Hands protection: protective gloves resistant to alkaline solutions, alcohols and petrol. Must follow the manufacturer's recommended time to use gloves.
Eyes protection: closed goggles or a face shield.
Skin protection: cotton work dress, at increased risk of splashing wear a protective apron of material resistant to alkaline solutions.
8.2.2 Reduction of the environment exposure
Prevent leaks of the preparation to the sewage system, water and soil.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
Appearance and state (at 20 °C): clear liquid
Colour: colorless to yellowish
Odour: lemon
Flashpoint: non-flammable
Ignition temperature: non-flammable
Class of risk: non-flammable
Explosibility ranges: it does not form an explosive mixture
Density (kg/l at 20°C): 0.98
PH value (at 20°C): 11-12
Solubility (at 20°C) in water (g/l): soluble in a limited manner
Viscosity: not determined
Oxidation properties: does not show oxidation properties
9.2 Other Information
None.

SECTION 10: STABILITY AND REACTIVITY
10.1 Reactivity
Reacts with oxidation agents which react with amines.
10.2 Chemical stability
Mixture stable when used professionally for the intended purposes.
10.3 Possibility of hazardous reactions
The reagent reacting with amines.
10.4 Conditions to be avoid
Strong heating.
10.5 Incompatible materials
The reagent reacting with amines.
10.6 Hazardous decomposition products
Toxic substances may form at high temperatures.

SECTION 11: TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects
11.1.1 Acute toxicity of the hazardous substance contained in the preparation

Substance Name	CAS	LD50 oral rat	LC50 inhal. rat	LD5 derm. rabbit
2-butoxyethan-1-ol	111-76-2	560 mg/kg	2,21 mg/i 4 h	220 mg/kg
ethanolamin	141-43-5	1515 mg/kg	-	1025 g/kg

Further toxicological information: none

11.1.2. Senzibilization: preparation does not contain any senzibilizing substances.
11.1.3. Carcinogenicity: preparation does not contain any carcinogenic substances.
11.1.4. Mutagenity: preparation does not contain substances classified as mutagenes.
11.1.5. Toxicity for reproduction: preparation does not contain substances classified as toxic for reproduction.

SECTION 12: ECOLOGICAL INFORMATION
12.1 Toxicity: Ecotoxicity of the preparation was not tested. A mixture of the alkaline solution, it is dangerous to surface water. Prevent penetration into the water, soil and drainage.
12.2 Persistence and degradability: the mixture is biodegradable.
12.3 Bioaccumulative potential: unknown.
12.4 Mobility in soil: unknown.
12.5 Results of PBT and vPvB assessment: components and mixture are not PBT or vPvB.
12.6 Other adverse effects: the preparation does not show any anomalies in the biological water treatment plants if used in a common manner.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Residues of the product, polluted materials and empty non-returnable polluted containers must be liquidated by the waste producer in accordance with Act No. 185/2001 Coll., on waste and amendment to some other acts, and Act No. 477/2001 Coll. on packing and amendments to some other acts.
The used and fully emptied packing must be disposed at the collection point of waste containers.
Designation of waste under the Waste Catalogue: 15 01 10 * packaging containing residues of dangerous substances.
Collect residues of the product devalued by use in marked packs and hand over for liquidation to the person authorized to handle dangerous waste.
Designation of waste under the Waste Catalogue: 16 10 03 * aqueous concentrates containing dangerous substances.

SECTION 14: TRANSPORT INFORMATION

The product is not dangerous for transport.

14.1 UN number
14.2 UN proper shipping name
14.3 Transport hazard class(es)
14.4 Packing group
14.5 Environmental hazards: hazardous to the environment.
14.6 Special precautions for user: none.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation of European Parliament and Council (EC) No.1907/2006,on registration, evaluation, approvals and restrictions of chemical substances, on establishment of European Agency for chemical substances and implementing and related regulations. ▪ Act No.185/2001 Coll., on waste and amendments to some other acts, Decree No. 381/2001 Coll., Waste Catalogue ▪ Decree No. 383//2001 Coll., on details of handling waste ▪ Act No. 258/2000 Coll., on public health ▪ Government Directive No. 178/2001 Coll., stipulating the conditions of health protection of employees at work ▪ Decree No. 432/2003 Coll., stipulating conditions for the classification of work to categories, limit values of indicators of the biological exposure tests and requirements as to the reporting of works with asbestos and biological agents ▪ Act No. 477/2001 Coll., on packing, as amended ▪ Decree No. 115/2002 Coll., on details of handling the packing ▪ Act No. 59/2006 Coll., on prevention of serious accidents ▪ Communication No. 33/2005 Coll. (ADR), Communication No. 34/2005 Coll. (RID)

15.2. Chemical safety assessment

The assessment of chemical safety was not elaborated for the product.

SECTION 16: OTHER INFORMATION

16.1 The list and full wording of R sentences and H sentences used as specified in Points:

3.2 a)
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 34 Causes burns.
R36/38 Irritating to eyes and skin.
R41 Risk of serious damage to eyes.

3.2 b)
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H312 Harmful in contact with skin.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H318 Causes serious eye damage.
H361 Suspected of damaging fertility or the unborn child .

16.2 Changes against the previous issue none.

16.3 Sources of the most important data used to prepare this Safety Data Sheet:

Safety Data Sheets of raw materials from suppliers, Database ECB ESIS :EINECS/ELINCS (European Chemical Bureau – European Information System of Chemical Substances) ChemDat Merck, Fluka, Database DANELA Ekoline s.r.o. Brno.

16.4 Instruction for Training:

A corporate entity or a private entrepreneur manipulating with this chemical preparation must get acquainted with details stated in this Safety Data Sheet and must be trained in the area of the safety rules.

16.5 Notice: This Safety Data Sheet was prepared based on Regulation of the European Parliament and Council (EC) No. 1907/2006. The classification was done pursuant to the conventional calculation method. It contains data necessary to secure the safety and protection of health at work and the living environment protection. The data provided correspond to the current state of knowledge and experience and they are in accordance with the valid legal regulations. They cannot be deemed to be the guarantee of suitability and usability of the product for a given specific application.

16.6 Contact Point for Technical Information:

Specialized help line for the preparation use: +420 515 539 762

e-mail: info@dctchemicals.com
www.dctchemicals.com