



MATERIAL SAFETY DATA SHEET

[In accordance with the criteria of Regulation No 1907/2006 (REACH) and 453/2010]

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **DOX-1**
Chemical name: 1,4-Benzenediamine, N,N'-mixed Ph and tolyl derivs.
IUPAC name: Reaction mass of N-phenyl,N'-o-tolyl-phenylene diamine, N,N'-diphenyl-pphenylene diamine and N,N'-di-o-tolyl-phenylene diamine
CAS number: 68953-84-4
Registration number: 01-2119474682-31-0002

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:

Industrial uses

Formulation of DAPD.
Anti-oxidant use for manufacturing of tyres and retreading.
Anti-oxidant use for manufacturing of general rubber foods (GRG).
Anti-oxidant use during end of life tyre and GRG waste processing.

Professional uses

Anti-oxidant use during the service life of tyres -mounting and dismounting tyres.
Anti-oxidant use during the service life of GRG -maintenance of GRG articles.

Consumer uses

Anti-oxidant use during the service life of tyres.
Anti-oxidant use during the service life of GRG.

Uses advised against: not determinated.

1.3 Details of the supplier of the safety data sheet

Manufacturer: **DJCHEM CHEMICALS POLAND S.A. Bogdan Domagała**
Address: 05-200 Wołomin, ul. Łukasiewicza 11A, Poland
Telephone/Fax number:+48 22 787 63 46/+48 22 787 63 44
E-mail address for a competent person responsible for msds: biuro@theta-doradztwo.pl

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to 67/548/EEC

Xi R43; R33; **N** R50/53

May cause sensitisation by skin contact. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Classification according to 1272/2008/EC

Skin Sens. 1 H317; **Aquatic Acute 1** H400, **Aquatic Chronic 1** H410

May cause an allergic skin reaction. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.



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2.2 Label elements

Hazard symbols and signal words



DANGER

Hazard statements

H317 May cause an allergic skin reaction. H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P363 Wash contaminated clothing before reuse.

2.3 Other hazards

Substance is not a substance classified as PBT or vPvB.

Section 3: Composition/information on ingredients

3.1 Substances

Main component

Chemical name: 1,4-Benzenediamine, N,N'-mixed Ph and tolyl derivs.

Concentration range: >90%

CAS number: 68953-84-4

EINECS number: 273-227-8

Impurities

Chemical name: diphenylamine

Concentration range: <2%

CAS number: 122-39-4

EINECS number: 204-539-4

3.2 Mixtures

Not applicable.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: take off contaminated clothes. Wash out skin with plenty of water with soap. Consult a doctor, if symptoms persist.

Eye contact: wash out with plenty of water with the eyelid hold wide open, for 10-15 min. Remove any contact lenses. Avoid powerful water stream – risk of cornea damage. Obtain medical attention immediately.

Ingestion: rinse mouth with water; give plenty of water to drink. Consult a doctor – show the container or label. Do not give anything to drink to an unconscious person.

Inhalation: remove to fresh air, keep warm and calm. In case of some symptoms consult a doctor – show the container or label.



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4.2 Most important symptoms and effects, both acute and delayed

Skin contact: irritation, burns in case of long-term or repeating exposure, may cause allergic reaction.

Eye contact: mechanical irritation, redness, tearing.

Inhalation: may cause irritation mucosal membrane of respiratory system, caught.

Ingestion: stomach pain, nausea, vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: dry extinguishing, carbon dioxide, water spray. Use extinguishing measures that are appropriate to the environment.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame.

5.2 Special hazards arising from the substance or mixture

May produce toxic fumes, eg. carbon oxide and nitrogen oxide if burning. Do not inhale combustion products – it can be dangerous for health.

5.3 Advice for firefighters

Personal protection typical in case of fire. Self-contained breathing apparatus and protective clothing should be worn.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Wear adequate personal protective equipment. Avoid contact with skin and eyes. Ensure adequate ventilation. Avoid form and inhalation dusts.

6.2 Environmental precautions

In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

Collect spilled material in containers. Avoid forming dusts. Disposal in accordance with the local legislation. Clean the contamination place by solvents, eg. acetone, toluene, xylene (use in accordance with good occupational hygiene and safety practices), and afterwards by water.

6.4 Reference to other sections

Appropriate conduct with waste product – section 13.

Appropriate personal protective equipment – section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Ensure adequate ventilation. Do not inhale dusts. Before break and after work wash carefully hands. Avoid skin and eyes contamination. Keep not used containers tightly closed. Use only with purpose. Do not ingestion. See section 8 too.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original, tightly closed containers in dry, cool and well-ventilated place. Protect against humidity and heating above 50°C. Keep away from fire source. Keep away from food, beverages or feed for animals. Recommended material for packages: PE 25 kg, big-bags 1 000 kg.



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7.3 Specific end use(s)

See the adequate Exposure Scenario:

Formulation of DAPD – ES 1

Anti-oxidant use for manufacturing of tyres and retreading – ES 2

Anti-oxidant use for manufacturing of general rubber foods (GRG) – ES 3

Anti-oxidant use during the service life of tyres -mounting and dismounting tyres – ES 4

Anti-oxidant use during the service life of GRG -maintenance of GRG articles – ES 5

Anti-oxidant use during the service life of tyres – ES 6

Anti-oxidant use during the service life of GRG- ES 7

Anti-oxidant use during end of life tyre and GRG waste processing – ES 8.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Product doesn't contain any components with occupational exposure limit values at working place in Community.

Please check any national occupational exposure limit values in your country.

DNEL value

Population	DNEL oral mg/kg/24h	DNEL dermal mg/kg/24h	DNEL inhalation mg/m ³	Exposure
General population	0,16	0,153	0,32	Long-term exposure systemic effect
Workers	-	0,307	1,297	Long-term exposure systemic effect
General population	-	0,014	-	Long-term exposure Local effect
Workers	-	0,027	-	Long-term exposure Local effect

PNEC value

PNEC	Value	Assessment factor
Freshwater	0.00045 mg/l	10
Marinewater	0.000045 mg/l	100
Water (intermittent releases)	0.00079 mg/l	100
Sediment (freshwater)	6.15 mg/kg	100
Sediment (marinewater)	0.615 mg/kg	1000
Soil	1 mg/kg	1000
STP	100 mg/l	100
Oral	10.33 mg/kg	30



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8.2. Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. When handling do not eat, drink or smoke. Before break and after work carefully wash hands. Avoid skin and eyes contamination.

Hand and body protection

Use gloves from PCV or rubber. Use natural protective clothing materials (cotton) or synthetic fibers and protective footwear.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.



Eye/face protection

Use safety glasses (goggles) in the case of dust.

Respiratory protection

Not required. In case of forming dust use dustmask.

Environmental exposure controls

Do not allow the large quantity of mixture to contaminate surface water/ground water.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	solid
colour:	grey-brown
odour:	aromatic
odour threshold:	not determined
pH:	not applicable
melting point/freezing point:	87-105°C
initial boiling point and boiling range:	not applicable
flash point:	not applicable
evaporation rate:	not determined
flammability (solid, gas):	none
upper/lower flammability or explosive limits:	not applicable
vapour pressure (25°C):	negligible
vapour density:	not determined
density:	1,0-1,2 g/cm ³
solubility(ies):	insoluble in water, soluble in acetone, toluene, xylene
partition coefficient: n-octanol/water:	3,4-4,3
auto-ignition temperature:	not applicable
decomposition temperature:	not determined
explosive properties:	not display
oxidising properties:	not display
viscosity:	not determined

9.2 Other information

None.

Section 10: Stability and reactivity

10.1 Reactivity

It reacts with strong oxidizing.

10.2 Chemical stability

The product is stable.



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10.3 Possibility of hazardous reactions

None.

10.4 Conditions to avoid

High temperature, humidity, oxygen.

10.5 Incompatible materials

Strong oxidizers.

10.6 Hazardous decomposition products

None.

Section 11: Toxicological information

11.1 Information on toxicological effects

Information regarding acute and/or delayed results of the exposure was defined on the basis of the information on product's classification and/or toxicological studies.

Acute toxicity

LD ₅₀ (rat, oral)	> 5000 mg/kg (EPA OTS 798.1175)	Source: Mallory, V.T. (1994)
LD ₅₀ (rabbit, dermal)	ok. 2000 mg/kg (OECD 402)	Source: Merriman, T.N.(1995a)

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Irritation (rabbit)	slight irritation (OECD 404)	Source: Merriman, T.N.(1995a)
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Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Irritation (rabbit)	no irritation (OECD 405)	Source: Bomhard, E and Martins, T (1990c)
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Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Sensitization (guinea-pig)	sensitization (OECD 406)	Source: Merriman, T.N.(1995a)
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Based on available data, the classification criteria are not met.

Reproductive toxicity (oral)

NOAEL	16 mg/kg (method: calculated)
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Based on available data, the classification criteria are not met.

Germ cell mutagenicity

In vitro and in vivo tests – negative.

Based on available data, the classification criteria are not met.

Carcinogenicity

NOAEC	1 900 mg/kg	Source: Iatropoulos, M.J. (1997)
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Based on available data, the classification criteria are not met.

reproductive toxicity

LOEC	200 mg/kg (OECD 414)	Source: Tyl, R.W. (1995)
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Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.



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Skin contact: irritation, burns in case of long-term or repeating exposure, may cause allergic reaction.

Eye contact: mechanical irritation, redness, tearing.

Inhalation: may cause irritation mucosal membrane of respiratory system, caught.

Ingestion: stomach pain, nausea, vomiting.

Section 12: Ecological information

12.1 Toxicity

EC ₅₀ (fish)	0,48 mg/l/4 dni/ <i>Oncorhynchus mykiss</i> /OECD 204	source: Dionne, E. (1997b)
NOEC (fish)	0,14 mg/l/14 dni/ <i>Oncorhynchus mykiss</i> / OECD 204	source: Dionne, E. (1997b)
EC ₅₀ (daphnie)	1,1-1,8 mg/l/48h/ <i>Daphnia magna</i> /OECD 202	source: Putt, A.E. (1995)
EC ₁₀ (daphnie)	0,0045 mg/l/21 dni/ <i>Daphnia magna</i> /OECD 211	source: Sacker, D. (2010a)
EC ₅₀ (algae)	>0,079 mg/l/72h/ <i>Selenastrum capricornutum</i> /OECD 201	source: Hoberg, J.R. (1996)
NOEC (sludge)	ok. 615,2 mg/l/28 dni/ <i>Chironomus riparius</i> /OECD 218	source: Sacker, D. (2010b)

Product is very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product is not biodegradable in water. It can be biodegradable in soil (t_{1/2} 66,5 days).

12.3 Bioaccumulative potential

Product has bioaccumulative potential (BCF: 20-10 900)

12.4 Mobility in soil

Product is low mobile in soil. It is not soluble in water.

12.5 Results of PBT and vPvB assessment

None.

12.6 Other adverse effects

This product has no influence on the global warming or the ozone layer depletion.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the product: disposal in accordance with the local legislation. Do not remove with household garbage. Store remaining in original containers. Recycle, if possible.

Disposal methods for used packing: empty containers give for appropriate rubbish dump or for disposal in accordance with the local legislation. Dispose of uncleanable containers like of the product.

Legal basis: Directive 2008/98/EC, 94/62/EC.

Section 14: Transport information

14.1 UN number

ADR: 3077, classification code: M7, hazard distinctive identification number: 90

ICAO/IATA: 3077

IMDG: 3077, EmS code: F-A, S-F

14.2 UN proper shipping name

ADR: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (DAPD)

ICAO/IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (DAPD)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (DAPD)



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14.3 Transport hazard class(es)

ADR: 9
ICAO/IATA: 9
IMDG: 9



14.4 Packing group

ADR: III
ICAO/IATA: III
IMDG: III

14.5 Environmental hazards

Product is dangerous for environment. Product should be labeled by special label "marine pollutant"

14.6 Special precautions for user

Wear adequate personal protective equipment. See section 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

Section 15: Regulatory information

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

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance).

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

Commission Regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (Text with EEA relevance).

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance).

15.2 Chemical safety assessment

Substance has chemical safety assessment.

Contry or region	Inventory name	on inventory (yes/no)
Australia	Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme (AICS/NICNAS)	yes
Canada	Canadian Domestic Substances List (DSL)	yes
Canada	Canadian Environmental Protection Act (CEPA)	yes
China	Inventory of Existing Chemical Substances in China (IECSC)	yes
Europe	European Inventory of New Existing Chemicals (EINECS)	yes
Europe	European List of Notified Chemicals Substances (ELINCS)	no
Japan	Inventory of Existing and New Chemical Substances (ENCS)	yes
Korea	Korean Toxic Substances Control Act (ECL)	yes



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New Zealand	New Zealand Inventory of Chemicals (NZIoC)	yes
Phillipines	Phillipines Inventory (PICCS)	yes
United States	Toxic Substances Control Act (TSCA)	yes

Section 16: Other information

Full text of indicated R and H phrases mentioned in section 3

R33	Danger of cumulative effects.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training.

Other data

Date of update:	15.04.2012
Version:	2.1/EN
Changes:	section: 13,15,16
Composed by:	Anna Królak(on the basis of producer's data).
Safety Data Sheet made by:	„THETA” Doradztwo Techniczne

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.