

Antiozonant DOX-1

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION	
Manufacturer DJCHEM Chemicals Poland SA 5-200 WOLOMIN Lukaszewicza 11A, Poland	Emergency Contact Chemtrec: 1-800-424-9300 (USA) (1)330-542-8400 (outside USA)
Trade Name(s): DOX-1 Pastilles	Chemical Name: N'N-diaryl-paraphenylene diamine mixture
Relevant identified uses of the substance or mixture and uses advised against: Not determined	Application of the substance/the preparation: Rubber compounding.
Issued By: Sovereign Chemical Company According to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS	Date of Issue: May 1, 2023

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
 Information in accordance with US 29 CFR 1910.1200 (Hazcom 2012) and Regulation (EC) No 1272/2008

Label elements



WARNING

Hazard statements

H361	Suspected of damaging fertility or the unborn child.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing.
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.

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
 vPvB: Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Substance

Chemical Name	CAS No	EC No	Weight %	Classification
1,4-Benzenediamine, N,N'-mixed Ph and tolyl derivs.	68953-84-4	68953-84-4	≥85%	N/A
diphenylamine	122-39-4	204-539-4	≤2%	Acute Tox. 3 H301, Acute Tox. 3 H311, Acute Tox. 3 H331, STOT RE 2 H373, Aquatic Acute 1 H400, Aquatic Chronic 1 H410

The remaining unspecified ingredients are impurities and are not hazardous.

4. FIRST AID MEASURES

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 held 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.

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 of mucosal membrane of respiratory system, caught. **Ingestion:** stomach pain, nausea, vomiting.

Other effects of exposure: suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed

Physician decides regarding further medical treatment after thorough examination of the injured.

5. FIRE FIGHTING MEASURES

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.

Special hazards arising from the substance or mixture

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

Advice for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Limit 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.

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.

Methods and material for containment and cleaning up

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

Reference to other sections

Appropriate conduct with waste product – section 13.

Appropriate personal protective equipment – section 8.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Ensure adequate ventilation. Do not inhale dust. Before break and after work wash hands carefully. Avoid skin and eyes contamination. Keep the unused containers tightly closed. Prevent the product from contact with mouth. Pregnant women or women who plan pregnancy should not work with this product.

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 sources. Take action to prevent static discharges. Keep away from food, beverages, or feed for animals. Recommended material for packages: PE 25 kg, big bags 1 000 kg.

Specific end use(s)

See the adequate Exposure Scenario: Formulation of DAPD – ES 1 Anti-oxidant use for manufacturing of tires and retreading – ES 2 Anti-oxidant use for manufacturing of general rubber foods (GRG) – ES 3 Anti-oxidant use during the service life of tires -mounting and dismounting tires – 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 tires – ES 6 Anti-oxidant use during the service life of GRG- ES 7 Anti-oxidant use during end of life tire and GRG waste processing – ES 8.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Control parameters

Product does not contain any components with occupational exposure limit values at working place in Community (Legal Basis: Commission Directive 2000/39/EC, 2006/15/EC, 2009/161/EC, 2017/164/EC.). 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 mg/l	10
Marinewater	0 mg/l	100
Sediment (freshwater)	6.15 mg/kg	100
Sediment (marinewater)	0.615 mg/kg	1000
Soil	1 mg/kg	1000
STP	0,2 mg/l	100
Oral	10.33 mg/kg	30

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 case of dust.

Respiratory protection

Not required. In case of forming dust use dust mask. Personal protective equipment must meet requirements of regulation (EU) 2016/425. Employer is obliged to ensure equipment adequate for activities carried out, with quality demands, cleaning and maintenance.

Environmental exposure controls

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Form: Solid Color: Grey-brown	Change in Condition Melt Point/Range: 87-105°C Boiling Point/Range: Not applicable.
Odor: Aromatic	Odor threshold: Not determined
pH: Not applicable	Flash point: Not applicable
Vapor Pressure: Not applicable	Flammability (solid, gaseous): Product is not flammable.
Density at 20 °C: 1.0-1.2 g/cm ³	Ignition temperature: Not determined
Relative density: Not determined.	Decomposition temperature: Not determined
Vapor Density: Not applicable	Self-igniting: Not determined.
Evaporation rate: Not applicable.	Danger of explosion: Product does not present an explosion hazard.
Solubility in / Miscibility with water: Insoluble.	Partition coefficient (n-octanol/water): 3.4-4.3

Viscosity Dynamic: Not applicable. Kinematic: Not applicable.	Explosion limits Lower: Not determined. Upper: Not determined.
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Other information: No further relevant information available.

10. STABILITY AND REACTIVITY

Reactivity

It reacts with strong oxidization.

Chemical stability

The product is stable.

Possibility of hazardous reactions

None.

Conditions to avoid

High temperature, humidity, oxygen.

Incompatible materials

Strong oxidizers.

Hazardous decomposition products

None.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

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

Acute toxicity

LD50 (rat, oral) > 5000 mg/kg (EPA OTS 798.1175) Source: Mallory, V.T. (1994)
 LD50 (rabbit, dermal) cca. 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)
 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)
Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Sensitization sensitization (OECD 406) Source: Merriman, T.N.(1995a)
(guinea-pig)

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)

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

Reproductive toxicity

The effects of derivatives on fertility and reproductive toxicity were studied in a two-generation study on rats at dose levels of 120, 400 and 1500 ppm in the diet. No reproductive toxicity was observed in males from generations F0 and F1 up to 1500 ppm, but changes were observed at various dose levels in female rats in all generations.

Suspected of damaging fertility or the unborn child.

STOT-single exposure

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

STOT-repeated exposure

NOAEL 16 mg/kg (method: calculated)

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

Aspiration hazard

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

12. ECOLOGICAL INFORMATION

Toxicity

EC50 (fish) 0,48 mg/l/4 days/ Oncorhynchus mykiss/OECD 204 source: Dionne, E. (1997b)

NOEC (fish) 0,14 mg/l/14 days/ Oncorhynchus mykiss/ OECD 204 source: Dionne, E. (1997b)

EC50 (daphnie) 1,1-1,8 mg/l/48h/Daphnia magna/OECD 202 source: Putt, A.E. (1995)

EC10 (daphnie) 0,0045 mg/l/21 days/Daphnia magna/OECD 211 source: Sacker, D. (2010a)
EC50 (algae) >0,079 mg/l/72h/ Selenastrum capricornutum/OECD 201 source: Hoberg, J.R. (1996)
NOEC (sludge) cca. 615,2 mg/l/28 days/ Chironomus riparius/OECD 218 source: Sacker, D. (2010b)
Product is very toxic to aquatic life with long lasting effects.

Persistence and degradability

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

Bioaccumulative potential

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

Mobility in soil

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

Results of PBT and vPvB assessment

None.

Other adverse effects

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

13. DISPOSAL CONSIDERATIONS

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 are given for an 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 as amended; 94/62/EC as amended.

14. TRANSPORTATION INFORMATION

UN-Number

ADR: 3077, classification code: M7, hazard distinctive identification number: 90
ICAO/IATA: 3077
IMDG: 3077, EmS code: F-A, S-F
DOT: N/A

UN proper shipping name

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

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

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

DOT N/A

Transport hazard class(es)

ADR: 9
ICAO/IATA: 9
IMDG: 9
DOT: N/A



Packing group

ADR: III
ICAO/IATA: III
IMDG: III
DOT: N/A

Environmental hazards

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

Special precautions for user

Wear adequate personal protective equipment. See section 8.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

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 (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). 2016/425/EU Regulation (EU)

2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives as amended European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste as amended

Chemical safety assessment was carried out for specific identified uses.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.