

Safety Data Sheet

29 Mix primary aromatic amines in methanol

Version : V2.0.0.1

Report No. : BWQ8941-2016-MSDS-EP

Creation Date : 2025/12/24

Revision Date : -



*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

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

1.1 Product identifier

Product Name	29 Mix primary aromatic amines in methanol
Cat No.	BWQ8941-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
REACH Registration Number	-
UFI	No information available

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

1.4 Emergency telephone number

Emergency telephone number	010-58103678
Opening hours	24h

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

Flammable liquids	Category 2
Acute Toxicity - Oral	Category 3
Acute Toxicity - Dermal	Category 3
Acute Toxicity - Inhalation	Category 3
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1

Specific target organ toxicity - single exposure	Category 1
Hazardous to the aquatic environment - long-term (chronic) hazard	Category 3

2.2 Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H301	Toxic if swallowed
H311	Toxic in contact with skin
H331	Toxic if inhaled
H340	May cause genetic defects
H350	May cause cancer
H370	Causes damage to organs
H412	Harmful to aquatic life with long lasting effects
EUH208	Contains sensitising substance. May produce an allergic reaction

Precautionary statements

◆ Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

◆ Response

P311	Call a POISON CENTER/ doctor.
P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO ₂ or water spray; Large fire: dry chemical, CO ₂ , alcohol-resistant foam or water spray; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

◆ Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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2.3 Other hazards

◆ Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Methanol	Not PBT/vPvB
p-phenylenediamine	Not PBT/vPvB
m-phenylenediamine	Insufficient information, temporarily unable to evaluate
4-methyl-m-phenylenediamine	Insufficient information, temporarily unable to evaluate
4,4'-oxydianiline	Not PBT/vPvB
p,p'-Diaminodiphenyl	Insufficient information, temporarily unable to evaluate
4,4'-methylenedianiline	Not PBT/vPvB
Aniline	Not PBT/vPvB
o-anisidine	Insufficient information, temporarily unable to evaluate
o-toluidine	Not PBT/vPvB
4,4'-methylenedi-o-toluidine	Insufficient information, temporarily unable to evaluate
3,3'-dimethoxybenzidine	Insufficient information, temporarily unable to evaluate
4,4'-bi-o-toluidine	Insufficient information, temporarily unable to evaluate
2,6-xylylidine	Insufficient information, temporarily unable to evaluate
2,4'-Diaminodiphenylmethane	Insufficient information, temporarily unable to evaluate
4-methoxy-m-phenylenediamine	Insufficient information, temporarily unable to evaluate
2-Methoxy-5-methylaniline	Insufficient information, temporarily unable to evaluate

2,4,5-trimethylaniline	Insufficient information, temporarily unable to evaluate
4,4'-thiodianiline	Insufficient information, temporarily unable to evaluate
4-chloroaniline	Not PBT/vPvB
2,4-xylydine	Insufficient information, temporarily unable to evaluate
2-naphthylamine	Insufficient information, temporarily unable to evaluate
2,2'-Methylenedianiline	Insufficient information, temporarily unable to evaluate
Biphenyl-4-ylamine	Insufficient information, temporarily unable to evaluate
4-chloro-o-toluidine	Insufficient information, temporarily unable to evaluate
5-nitro-o-toluidine	Insufficient information, temporarily unable to evaluate
3,3'-dichlorobenzidine	Insufficient information, temporarily unable to evaluate
4-aminoazobenzene	Insufficient information, temporarily unable to evaluate
4,4'-Methylene bis(2-chloroaniline)	Not PBT/vPvB
o-Aminoazotoluene	Insufficient information, temporarily unable to evaluate

◆ Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605]
Methanol	Insufficient information, temporarily unable to evaluate
p-phenylenediamine	Insufficient information, temporarily unable to evaluate
m-phenylenediamine	Insufficient information, temporarily unable to evaluate
4-methyl-m-phenylenediamine	Insufficient information, temporarily unable to evaluate
4,4'-oxydianiline	Insufficient information, temporarily unable to evaluate
p,p'-Diaminodiphenyl	Insufficient information, temporarily unable to evaluate
4,4'-methylenedianiline	Insufficient information, temporarily unable to evaluate
Aniline	Insufficient information, temporarily unable to evaluate
o-anisidine	Insufficient information, temporarily unable to evaluate
o-toluidine	Insufficient information, temporarily unable to evaluate
4,4'-methylenedi-o-toluidine	Insufficient information, temporarily unable to evaluate
3,3'-dimethoxybenzidine	Insufficient information, temporarily unable to evaluate
4,4'-bi-o-toluidine	Insufficient information, temporarily unable to evaluate
2,6-xylydine	Insufficient information, temporarily unable to evaluate
2,4'-Diaminodiphenylmethane	Insufficient information, temporarily unable to evaluate
4-methoxy-m-phenylenediamine	Insufficient information, temporarily unable to evaluate
2-Methoxy-5-methylaniline	Insufficient information, temporarily unable to evaluate
2,4,5-trimethylaniline	Insufficient information, temporarily unable to evaluate
4,4'-thiodianiline	Insufficient information, temporarily unable to evaluate

4-chloroaniline	Insufficient information, temporarily unable to evaluate
2,4-xylydine	Insufficient information, temporarily unable to evaluate
2-naphthylamine	Insufficient information, temporarily unable to evaluate
2,2'-Methylenedianiline	Insufficient information, temporarily unable to evaluate
Biphenyl-4-ylamine	Insufficient information, temporarily unable to evaluate
4-chloro-o-toluidine	Insufficient information, temporarily unable to evaluate
5-nitro-o-toluidine	Insufficient information, temporarily unable to evaluate
3,3'-dichlorobenzidine	Insufficient information, temporarily unable to evaluate
4-aminoazobenzene	Insufficient information, temporarily unable to evaluate
4,4'-Methylene bis(2-chloroaniline)	Insufficient information, temporarily unable to evaluate
o-Aminoazotoluene	Insufficient information, temporarily unable to evaluate

◆ Other

Not applicable.

3 Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Component	Weight % content(or range)	Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP]	Specific Conc. Limits, M-factors
Methanol CAS : 67-56-1 EC : 200-659-6 Index No. : 603-001-00-X	96.23	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure, Category 1, H370	H370:C ≥ 10% H371:3% ≤ C < 10%
p-phenylenediamine CAS : 106-50-3 EC : 203-404-7 Index No. : 612-028-00-6	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Sensitization - skin, Category 1, H317; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
m-phenylenediamine CAS : 108-45-2 EC : 203-584-7 Index No. : 612-147-00-3	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Sensitization - skin, Category 1, H317; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331; Germ cell mutagenicity, Category 2, H341; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
4-methyl-m-phenylenediamine	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 4, H312;	-

CAS : 95-80-7 EC : 202-453-1 Index No. : 612-099-00-3		Sensitization - skin, Category 1, H317; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 2, H373; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	
4,4'-oxydianiline CAS : 101-80-4 EC : 202-977-0 Index No. : 612-199-00-7	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Germ cell mutagenicity, Category 1B, H340; Carcinogenicity, Category 1B, H350; Reproductive toxicity, Category 2, H361; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
p,p'-Diaminodiphenyl CAS : 92-87-5 EC : 202-199-1 Index No. : 612-042-00-2	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1A, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	H350A:C ≥ 0.01%
4,4'-methylenedianiline CAS : 101-77-9 EC : 202-974-4 Index No. : 612-051-00-1	0.13	Sensitization - skin, Category 1, H317; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Specific target organ toxicity - single exposure, Category 1, H370; Specific target organ toxicity - repeated exposure, Category 2, H373; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
Aniline CAS : 62-53-3 EC : 200-539-3 Index No. : 612-008-00-7	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Sensitization - skin, Category 1, H317; Serious eye damage/irritation, Category 1, H318; Acute Toxicity - Inhalation, Category 3, H331; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 2, H351; Specific target organ toxicity - repeated exposure, Category 1, H372; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400	H372:C ≥ 1% H373:0.2% ≤ C < 1%
o-anisidine CAS : 90-04-0 EC : 201-963-1 Index No. : 612-035-00-4	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350	-
o-toluidine CAS : 95-53-4 EC : 202-429-0 Index No. : 612-091-00-X	0.13	Acute Toxicity - Oral, Category 3, H301; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400	-
4,4'-methylenedi-o-toluidine CAS : 838-88-0 EC : 212-658-8 Index No. : 612-085-00-7	0.13	Acute Toxicity - Oral, Category 4, H302; Sensitization - skin, Category 1, H317; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1,	-

		H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	
3,3'-dimethoxybenzidine CAS : 119-90-4 EC : 204-355-4 Index No. : 612-036-00-X	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1B, H350	-
4,4'-bi-o-toluidine CAS : 119-93-7 EC : 204-358-0 Index No. : 612-041-00-7	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
2,6-xylylidine CAS : 87-62-7 EC : 201-758-7 Index No. : 612-161-00-X	0.13	Acute Toxicity - Oral, Category 4, H302; Acute Toxicity - Dermal, Category 4, H312; Skin Corrosion/Irritation, Category 2, H315; Acute Toxicity - Inhalation, Category 4, H332; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Carcinogenicity, Category 2, H351; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
2,4'-Diaminodiphenylmethane CAS : 1208-52-2 EC : - Index No. : -	0.13	Acute Toxicity - Oral, Category 3, H301; Sensitization - skin, Category 1, H317; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Specific target organ toxicity - single exposure, Category 1, H370; Specific target organ toxicity - repeated exposure, Category 2, H373; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
4-methoxy-m-phenylene diamine CAS : 615-05-4 EC : 210-406-1 Index No. : 612-200-00-0	0.13	Acute Toxicity - Oral, Category 4, H302; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
2-Methoxy-5-methylaniline CAS : 120-71-8 EC : - Index No. : 612-209-00-X	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1B, H350	-
2,4,5-trimethylaniline CAS : 137-17-7 EC : 205-282-0 Index No. : 612-197-00-6	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
4,4'-thiodianiline CAS : 139-65-1 EC : 205-370-9 Index No. : 612-198-00-1	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
4-chloroaniline CAS : 106-47-8 EC : 203-401-0 Index No. : 612-137-00-9	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Sensitization - skin, Category 1, H317; Acute Toxicity - Inhalation, Category 3, H331; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard,	-

		Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	
2,4-xylidine CAS : 95-68-1 EC : 202-440-0 Index No. : -	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 2, H330; Specific target organ toxicity - repeated exposure, Category 2, H373; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
2-naphthylamine CAS : 91-59-8 EC : 202-080-4 Index No. : 612-022-00-3	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1A, H350; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	H350A:C ≥ 0.01%
2,2'-Methylenedianiline CAS : 6582-52-1 EC : 229-512-4 Index No. : -	0.13	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335	-
Biphenyl-4-ylamine CAS : 92-67-1 EC : 202-177-1 Index No. : 612-072-00-6	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1A, H350	-
4-chloro-o-toluidine CAS : 95-69-2 EC : 202-441-6 Index No. : 612-196-00-0	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
5-nitro-o-toluidine CAS : 99-55-8 EC : 202-765-8 Index No. : 612-210-00-5	0.13	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Carcinogenicity, Category 2, H351; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 3, H412	-
3,3'-dichlorobenzidine CAS : 91-94-1 EC : 202-109-0 Index No. : 612-068-00-4	0.13	Acute Toxicity - Dermal, Category 4, H312; Sensitization - skin, Category 1, H317; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
4-aminoazobenzene CAS : 60-09-3 EC : 200-453-6 Index No. : 611-008-00-4	0.13	Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
4,4'-Methylene bis(2-chloroaniline) CAS : 101-14-4 EC : -	0.13	Acute Toxicity - Oral, Category 4, H302; Carcinogenicity, Category 1B, H350; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1,	-

Index No. : 612-078-00-9		H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	
o-Aminoazotoluene CAS : 97-56-3 EC : - Index No. : 611-006-00-3	0.13	Sensitization - skin, Category 1, H317; Carcinogenicity, Category 1B, H350	-

4 First-aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Ingestion	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.
Inhalation	Fresh air, rest. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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4.3 Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Small fire: dry chemical, CO ₂ or water spray; Large fire: dry chemical, CO ₂ , alcohol-resistant foam or water spray; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers.
Unsuitable extinguishing media	No information available.

5.2 Specific hazards arising from the substance or mixture

1	May emit poisonous fumes on fire.
2	Development of hazardous combustion gases or vapor possible in the event of fire.
3	May expansion or decompose explosively when heated or involved in fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
2	Do not touch or walk through spilled material.
3	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
4	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
5	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
6	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

1	Do not touch or cross spills.
2	Cover with anti-solvent foam to reduce evaporation.
3	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-virus suits.
4	Spray water disperses the vapor and dilutes the liquid spill.
5	Do not touch broken containers and spills before putting on appropriate protective clothing.
6	Cut off the source of the leak as much as possible.
7	Keep leaks in a ventilated place.
8	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
9	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
10	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

6.4 Reference to other sections

1	Personal Protective Equipment advice is contained in Section 8 of the SDS.
2	Disposal considerations advice is contained in Section 13 of the SDS.

7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Keep away from heat/sparks/open flames/ hot surfaces.
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◆ Measures to prevent aerosol and dust generation

1	Not applicable.
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◆ Advice on general occupational hygiene

1	Wash hands and face after using the substances.
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2	Replace the contaminated clothing immediately.
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7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

7.3 Specific end use(s)

1	In addition to use mentioned in the Section 1.2, unforeseen other specific end uses.
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8 Exposure controls/personal protection

8.1 Control parameters

◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Methanol	Japan - JSOH(2024–2025)	200	260	-	-
	Permissible exposure standards for workers in the workplace	200	262	250	327.5
	European Union	200	260	-	-
	France	200	260	-	-
	Germany (AGS)	100	130	200	260
	Germany (DFG)	100	130	200	260
p-phenylenediamine	Japan - JSOH(2024–2025)	-	0.1	-	-
	Permissible exposure standards for workers in the workplace	-	0.1	-	0.3
	France	-	0.1	-	-
	Germany (AGS)	-	0.1	-	0.2
	Germany (DFG)	-	0.1	-	0.2
	United Kingdom	-	0.1	-	-
m-phenylenediamine	Japan - JSOH(2024–2025)	-	0.1	-	-
	Belgium	-	0.1	-	-
	Denmark	-	0.1	-	0.2
	Ireland	-	0.1	-	-
	Latvia	-	0.1	-	-

	New Zealand	-	0.1	-	-
4-methyl-m-phenylenedia mine	Austria	0.02	0.1	0.08	0.4
	Poland	-	0.04	-	0.1
	Romania	1	5	2	10
	Switzerland	0.02	0.1	-	-
p,p'-Diaminodiphenyl	Permissible exposure standards for workers in the workplace	-	-	-	-
	France	0.001	0.008	-	-
	Italy	-	-	0.001	-
	Hungary	-	0.008	-	-
4,4'-methylenedianiline	Japan - JSOH(2024-2025)	-	0.4	-	-
	European Union	-	0.08	-	-
	France	-	0.08	-	-
	Germany (AGS)	-	0.7	-	5.6
	Italy	-	0.08	-	-
	United Kingdom	0.01	0.08	-	-
Aniline	Japan - JSOH(2024-2025)	1	3.8	-	-
	Permissible exposure standards for workers in the workplace	2	7.6	4	15.2
	European Union	2	7.74	5	19.35
	France	2	7.74	5	19.35
	Germany (AGS)	2	7.7	4	15.4
	Germany (DFG)	2	7.7	4	15.4
	o-anisidine	Japan - JSOH(2024-2025)	0.1	0.5	-
Permissible exposure standards for workers in the workplace		0.1	0.5	0.3	1.5
France		0.1	0.5	-	-
Austria		0.1	0.5	0.2	1
Belgium		0.1	0.5	-	-
Denmark		0.1	0.5	0.2	1
o-toluidine	Japan - JSOH(2024-2025)	1	4.4	-	-

	Permissible exposure standards for workers in the workplace	5	22	10	33
	European Union	0.1	0.5	-	-
	France	0.1	0.5	-	-
	Germany (AGS)	0.1	0.5	-	-
	Italy	0.1	0.5	-	-
4,4'-methylenedi-o-toluidine	Austria	-	0.05	-	0.2
	Switzerland	-	0.05(inhalable aerosol)	-	-
3,3'-dimethoxybenzidine	Permissible exposure standards for workers in the workplace	-	-	-	-
	Austria	0.003	0.03	0.012	0.12
	Poland	-	0.2	-	-
	Switzerland	0.003	0.03	-	-
	South Korea	-	0.01	-	-
4,4'-bi-o-toluidine	Permissible exposure standards for workers in the workplace	-	-	-	-
	Austria	0.003	0.03	0.012	0.12
	Poland	-	0.03	-	-
	USA - NIOSH	-	-	-	0.02
2,6-xylydine	Denmark	0.5	2.5	1	5
	Finland	5	25	10	50
	Ireland	0.5	2.5	-	-
	Norway	1	5	-	-
	Singapore	0.5	2.5	-	-
2-Methoxy-5-methylaniline	Austria	-	0.5	-	2
	Switzerland	-	0.5	-	-
4-chloroaniline	Germany (AGS)	0.06	0.3	0.12	0.6
	Austria	0.04	0.2	0.12	0.8
	Hungary	-	0.2	-	0.8
	Poland	-	3	-	10
	Romania	-	2	-	5
	Switzerland	0.04	0.2(inhalable aerosol)	-	-
2,4-xylydine	Austria	5	25	20	20
	Denmark	0.5	2.5	1	5

	Finland	5	25	10	50
	Ireland	0.5	2.5	-	-
	Norway	1	5	-	-
	Singapore	0.5	2.5	-	-
2-naphthylamine	Permissible exposure standards for workers in the workplace	-	-	-	-
	France	0.001	0.005	-	-
	Italy	-	-	-	0.001
	Hungary	-	0.005	-	-
Biphenyl-4-ylamine	Permissible exposure standards for workers in the workplace	-	-	-	-
	France	0.001	0.007	-	-
	Italy	-	-	-	0.001
	Hungary	-	10	-	-
	Poland	-	0.001	-	-
5-nitro-o-toluidine	Austria	-	0.5	-	2
	Belgium	-	1	-	-
	Ireland	-	1	-	-
	Switzerland	0.08	0.5	-	-
	Canada - Ontario	-	1	-	-
	USA - ACGIH	-	1 (inhalable fraction and vapor)	-	-
3,3'-dichlorobenzidine	Permissible exposure standards for workers in the workplace	-	-	-	-
	Austria	0.003	0.03	0.012	0.12
	Hungary	-	0.03	-	-
	Switzerland	0.003	0.03	-	-
4,4'-Methylene bis(2-chloroaniline)	Japan - JSOH(2024-2025)	-	0.005	-	-
	Permissible exposure standards for workers in the workplace	0.02	0.218	0.06	0.654
	European Union	-	0.01	-	-
	France	-	0.01	-	-
	Germany (AGS)	-	0.41	-	0.82

	Italy	-	0.01	-	-
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◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Methanol	USA -ACGIH	Methanol(Urine)	15mg/L	End of shift	
Aniline	SCOEL(EU)	p-aminophenol/urine	30 mg/L	0-2 h after exposure/shift	
		Aniline, with hydrolysis(Urine)	0.5mg/L	End of shift	
Biphenyl-4-ylamine	USA -ACGIH	Methemoglobin(Hemoglobin in blood)	5%	During or end of shift	
4,4'-Methylene bis(2-chloroaniline)	USA -ACGIH	Total 4,4'-Methylene bis(2-chloroaniline), with hydrolysis(Urine)	Nonquantitative	End of shift	

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.

◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Methanol	Inhalation	No data available	No data available	130 mg/m ³	130 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
p-phenylenediamine	Inhalation	No data available	No data available	No data available	0.23 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
m-phenylenediamine	Inhalation	No data available	No data available	No data available	0.24 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4-methyl-m-phenylenediamine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4,4'-oxydianiline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
p,p'-Diaminodiphenyl	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available

	Dermal	No data available	No data available	No data available	No data available
4,4'-methylenedianiline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Aniline	Inhalation	No data available	No data available	No data available	7.7 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
o-anisidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
o-toluidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4,4'-methylenedio-toluidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
3,3'-dimethoxybenzidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4,4'-bi-o-toluidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2,6-xylydine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2,4'-Diaminodiphenylmethane	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4-methoxy-m-phenylenediamine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-Methoxy-5-methylaniline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2,4,5-trimethylaniline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

4,4'-thiodianiline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4-chloroaniline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2,4-xylidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-naphthylamine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2,2'-Methylenedianiline	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Biphenyl-4-ylamine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4-chloro-o-toluidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
5-nitro-o-toluidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
3,3'-dichlorobenzidine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4-aminoazobenzene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
4,4'-Methylene bis(2-chloroaniline)	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
o-Aminoazotoluene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Methanol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
p-phenylenediamine	510 ng/L	51 ng/L	334 µg/L	3.56 µg/kg sediment dw	356 ng/kg sediment dw	No hazard identified	413 ng/kg soil dw	No potential for bioaccumulation
m-phenylenediamine	1 µg/L	100 ng/L	1 mg/L	4.1 µg/kg sediment dw	410 ng/kg sediment dw	No hazard identified	200 ng/kg soil dw	No potential for bioaccumulation
4-methyl-m-phenylenediamine	5.64 µg/L	280 ng/L	1 mg/L	2.5 mg/kg sediment dw	No data available	No data available	320 µg/kg soil dw	No data available
4,4'-oxydianiline	1.8 µg/L	180 ng/L	10 mg/L	14.6 µg/kg sediment dw	1.46 µg/kg sediment dw	No hazard identified	1.898 µg/kg soil dw	No data available
4,4'-methylenedianiline	100 ng/L	10 ng/L	10 mg/L	375 µg/kg sediment dw	37.5 µg/kg sediment dw	No hazard identified	1.12 mg/kg soil dw	270 mg/kg food
Aniline	1.2 µg/L	120 ng/L	2 mg/L	153 µg/kg sediment dw	15.3 µg/kg sediment dw	No hazard identified	33 µg/kg soil dw	2.3 g/kg food
o-toluidine	252 ng/L	25.2 ng/L	15.5 mg/L	2.11 µg/kg sediment dw	210 ng/kg sediment dw	No hazard identified	273 ng/kg soil dw	No potential for bioaccumulation
4,4'-methylenedi-o-toluidine	6.1 µg/L	610 ng/L	900 mg/L	3.5 mg/kg sediment dw	350 µg/kg sediment dw	No data available	694 µg/kg soil dw	No data available
2,6-xylylidine	44 µg/L	4.4 µg/L	5.5 mg/L	291 µg/kg sediment dw	29.1 µg/kg sediment dw	No hazard identified	32.3 µg/kg soil dw	No potential for bioaccumulation
4-aminoazobenzene	460 ng/L	50 ng/L	470 µg/L	14.7 µg/kg sediment dw	No data available	No data available	4.91 µg/kg soil dw	No data available
Note 1: A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).								
Note 2: The PNEC values of the remaining components not shown in the product are not available yet.								

8.2 Exposure controls

8.2.1 Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

8.2.2 Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal dust proof gas mask.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

8.2.3 Environmental exposure controls

Environmental exposure controls	No information available
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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	yellow or brown liquid
Colour	yellow or brown liquid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-98 (Methanol)
Initial boiling point and boiling range(°C)	65 (Methanol)
Flash point(Closed cup, °C)	9 (Methanol)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit : 50 (Methanol) ; Lower limit : 6 (Methanol)
Vapor pressure	12.9 kPa (20°C,Methanol)
Vapor density(Air = 1)	1.1 (Methanol)
Relative density(Water=1)	0.79 (20°C,Methanol)
Solubility	Miscible with water (Methanol)
n-octanol/water partition coefficient	-0.74 (Methanol)
Auto-ignition temperature(°C)	440 (Methanol)
Decomposition temperature(°C)	No information available
Kinematic viscosity	0.544 mPa (25°C,Methanol)
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	Not applicable

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Information with regard to physical hazard classes	No information available
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9.2.2 Other safety characteristics

Other safety characteristics	No information available
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10 Stability and reactivity

Stability and reactivity

10.1 Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
10.2 Chemical stability	Stable under proper operation and storage conditions.
10.3 Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion. In contact with oxidants, anhydrides, metals, metal oxides / KMnO ₄ metal salts, nitro-compounds may cause a fire or explosion.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum. Oxidants, halogen, anhydrides, acids, metals, metal oxides, potassium permanganate, nitro-compounds and metal salts.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

29 Mix primary aromatic amines in methanol	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Causes damage to organs(Category 1)
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
Germ cell mutagenicity	May cause genetic defects(Category 1B)

Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
m-phenylenediamine	280mg/kg(Rat)	No information available	No information available
3,3'-dimethoxybenzidine	1920mg/kg(Rat)	No information available	No information available
Biphenyl-4-ylamine	500mg/kg(Rat)	No information available	No information available
Methanol	5628mg/kg(Rat)	15800mg/kg(Rabbit)	83.867mg/L(Rat)
4,4'-oxydianiline	725mg/kg(Rat)	No information available	No information available
4-methoxy-m-phenylenediamine	460mg/kg(Rat)	No information available	No information available

2,6-xylydine	840mg/kg(Rat)	No information available	No information available
o-toluidine	670mg/kg(Rat)	3260mg/kg(Rabbit)	3.778mg/L(Rat)
4-chloro-o-toluidine	1058mg/kg(Rat)	No information available	No information available
2-naphthylamine	727mg/kg(Rat)	No information available	No information available
2-Methoxy-5-methylaniline	1450mg/kg(Rat)	No information available	No information available
4,4'-methylenedianiline	517mg/kg(Rat)	1000mg/kg(Rat)	No information available
4,4'-Methylene bis(2-chloroaniline)	1140mg/kg(Rat)	> 5000mg/kg(Rabbit)	No information available
4-chloroaniline	300mg/kg(Rat)	360mg/kg(Rabbit)	2.34mg/L(Rat)
2,4-xylydine	467mg/kg(Rat)	No information available	No information available
p,p'-Diaminodiphenyl	309mg/kg(Rat)	No information available	No information available
o-anisidine	1150mg/kg(Rat)	No information available	No information available
4,4'-thiodianiline	900mg/kg(Rat)	No information available	No information available
p-phenylenediamine	80mg/kg(Rat)	No information available	0.92.mg/L(Rat)
Aniline	250mg/kg(Rat)	837mg/kg(Rabbit)	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Methanol	Not Listed	Not Listed
p-phenylenediamine	Category 3	Not Listed
m-phenylenediamine	Category 3	Not Listed
4-methyl-m-phenylenediamine	Category 2B	Category R
4,4'-oxydianiline	Category 2B	Category R
p,p'-Diaminodiphenyl	Category 1	Category K
4,4'-methylenedianiline	Category 2B	Category R
Aniline	Category 2A(Remark 1)	Not Listed
o-anisidine	Category 2A(Remark 2)	Category R
o-toluidine	Category 1	Category K
4,4'-methylenedi-o-toluidine	Category 2B	Not Listed
3,3'-dimethoxybenzidine	Category 2B	Category R
4,4'-bi-o-toluidine	Category 2B	Category R
2,6-xylydine	Category 2B	Not Listed
2,4'-Diaminodiphenylmethane	Not Listed	Not Listed
4-methoxy-m-phenylenediamine	Category 2B	Not Listed
2-Methoxy-5-methylaniline	Category 2B	Category R
2,4,5-trimethylaniline	Category 3	Not Listed

4,4'-thiodianiline	Category 2B	Category R
4-chloroaniline	Category 2B	Not Listed
2,4-xylydine	Category 3	Not Listed
2-naphthylamine	Category 1	Category K
2,2'-Methylenedianiline	Not Listed	Not Listed
Biphenyl-4-ylamine	Category 1	Category K
4-chloro-o-toluidine	Category 2A	Category R
5-nitro-o-toluidine	Category 3	Not Listed
3,3'-dichlorobenzidine	Category 2B	Category R
4-aminoazobenzene	Category 2B	Not Listed
4,4'-Methylene bis(2-chloroaniline)	Category 1 (Remark 3)	Category R
o-Aminoazotoluene	Category 2B	Category R

Remark 1: see also Aniline hydrochloride; Remark 2: see also ortho-Anisidine hydrochloride; Remark 3: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
Methanol	No information available
p-phenylenediamine	No information available
m-phenylenediamine	No information available
4-methyl-m-phenylenediamine	No information available
4,4'-oxydianiline	No information available
p,p'-Diaminodiphenyl	No information available
4,4'-methylenedianiline	No information available
Aniline	No information available
o-anisidine	No information available
o-toluidine	No information available
4,4'-methylenedi-o-toluidine	No information available
3,3'-dimethoxybenzidine	No information available
4,4'-bi-o-toluidine	No information available
2,6-xylydine	No information available
2,4'-Diaminodiphenylmethane	No information available
4-methoxy-m-phenylenediamine	No information available
2-Methoxy-5-methylaniline	No information available
2,4,5-trimethylaniline	No information available

4,4'-thiodianiline	No information available
4-chloroaniline	No information available
2,4-xylydine	No information available
2-naphthylamine	No information available
2,2'-Methylenedianiline	No information available
Biphenyl-4-ylamine	No information available
4-chloro-o-toluidine	No information available
5-nitro-o-toluidine	No information available
3,3'-dichlorobenzidine	No information available
4-aminoazobenzene	No information available
4,4'-Methylene bis(2-chloroaniline)	No information available
o-Aminoazotoluene	No information available

11.2.2 Other Information

Other Information	See Section 11.1
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12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
5-nitro-o-toluidine	LC ₅₀ : 70mg/L (96h)(Fish)	EC ₅₀ : 22.5mg/L (48h)(Crustaceans)	ErC ₅₀ : 15.4mg/L (96h)(Algae)
m-phenylenediamine	LC ₅₀ : 512mg/L (96h)(Fish)	EC ₅₀ : 2.0mg/L (48h)(Crustaceans)	ErC ₅₀ : 2.87mg/L (96h)(Algae)
3,3'-dimethoxybenzidine	LC ₅₀ : 26mg/L (96h)(Fish)	No information available	ErC ₅₀ : 14mg/L (72h)(Algae)
Methanol	LC ₅₀ : 24000mg/L (96h)(Fish)	EC ₅₀ : 24500mg/L (48h)(Crustaceans)	No information available
4,4'-oxydianiline	LC ₅₀ : 22mg/L (96h)(Fish)	EC ₅₀ : 0.99mg/L (48h)(Crustaceans)	ErC ₅₀ : 28mg/L (72h)(Algae)
4-aminoazobenzene	LC ₅₀ : 0.35mg/L (96h)(Fish)	EC ₅₀ : 0.46mg/L (48h)(Crustaceans)	ErC ₅₀ : 2.9mg/L (72h)(Algae)
2,6-xylydine	LC ₅₀ : >98mg/L (96h)(Fish)	EC ₅₀ : 20mg/L (48h)(Crustaceans)	ErC ₅₀ : >100mg/L (72h)(Algae)
4-methyl-m-phenylenediamine	LC ₅₀ : 1170mg/L (96h)(Fish)	EC ₅₀ : 15mg/L (48h)(Crustaceans)	ErC ₅₀ : 9.54mg/L (96h)(Algae)
o-toluidine	LC ₅₀ : 81.3mg/L (96h)(Fish)	EC ₅₀ : 16mg/L (48h)(Crustaceans)	ErC ₅₀ : 29.4mg/L (96h)(Algae)
3,3'-dichlorobenzidine	LC ₅₀ : 0.51mg/L (96h)(Fish)	EC ₅₀ : 1.9mg/L (48h)(Crustaceans)	ErC ₅₀ : 1.4mg/L (72h)(Algae)
4,4'-methylenedi-o-toluidine	LC ₅₀ : 460mg/L (96h)(Fish)	No information available	No information available
4,4'-bi-o-toluidine	LC ₅₀ : 13mg/L (96h)(Fish)	EC ₅₀ : 4.5mg/L (48h)(Crustaceans)	ErC ₅₀ : 6.3mg/L (72h)(Algae)

2-naphthylamine	LC ₅₀ : 3.9mg/L (96h)(Fish)	EC ₅₀ : 0.84mg/L (48h)(Crustaceans)	ErC ₅₀ : 0.50mg/L (72h)(Algae)
2-Methoxy-5-methylaniline	LC ₅₀ : 12.27mg/L (96h)(Fish)	No information available	No information available
4,4'-methylenedianiline	LC ₅₀ : 21mg/L (96h)(Fish)	EC ₅₀ : 2.5mg/L (48h)(Crustaceans)	ErC ₅₀ : 12mg/L (72h)(Algae)
4,4'-Methylene bis(2-chloroaniline)	LC ₅₀ : 0.61mg/L (96h)(Fish)	EC ₅₀ : 0.92mg/L (48h)(Crustaceans)	ErC ₅₀ : >0.85mg/L (72h)(Algae)
4-chloroaniline	LC ₅₀ : 5.8mg/L (96h)(Fish)	EC ₅₀ : 0.31mg/L (48h)(Crustaceans)	ErC ₅₀ : 2.6mg/L (96h)(Algae)
2,4-xylidine	No information available	EC ₅₀ : 9.9mg/L (48h)(Crustaceans)	ErC ₅₀ : 28.6mg/L (72h)(Algae)
p,p'-Diaminodiphenyl	LC ₅₀ : 5.88mg/L (96h)(Fish)	EC ₅₀ : 0.6mg/L (48h)(Crustaceans)	No information available
o-anisidine	LC ₅₀ : 200mg/L (96h)(Fish)	EC ₅₀ : 23mg/L (48h)(Crustaceans)	ErC ₅₀ : >30mg/L (72h)(Algae)
p-phenylenediamine	LC ₅₀ : 3.9mg/L (96h)(Fish)	EC ₅₀ : 0.28 mg/L (48h)(Crustaceans)	ErC ₅₀ : 0.18mg/L (72h)(Algae)
Aniline	LC ₅₀ : 27mg/L (96h)(Fish)	EC ₅₀ : 0.32mg/L (48h)(Crustaceans)	ErC ₅₀ : 20mg/L (96h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
m-phenylenediamine	No information available	NOEC : 0.20mg/L(Crustaceans)	NOEC : 10mg/L(Algae)
3,3'-dimethoxybenzidine	No information available	No information available	NOEC : 0.58mg/L(Algae)
4,4'-oxydianiline	NOEC : 5mg/L(Fish)	No information available	NOEC : 3.9mg/L(Algae)
4-aminoazobenzene	No information available	NOEC : 0.0071mg/L(Crustaceans)	NOEC : 0.14mg/L(Algae)
2,6-xylidine	No information available	NOEC : 2.2mg/L(Crustaceans)	NOEC : 32mg/L(Algae)
4-methyl-m-phenylenediamine	No information available	NOEC : 0.52mg/L(Crustaceans)	NOEC : 1.0mg/L(Algae)
3,3'-dichlorobenzidine	No information available	NOEC : 0.21mg/L(Crustaceans)	NOEC : 0.15mg/L(Algae)
o-toluidine	NOEC : 13mg/L(Fish)	NOEC : 0.013mg/L(Crustaceans)	NOEC : 6.4mg/L(Algae)
4,4'-bi-o-toluidine	No information available	NOEC : 0.26mg/L(Crustaceans)	NOEC : 0.45mg/L(Algae)
2-naphthylamine	No information available	NOEC : 0.014mg/L(Crustaceans)	NOEC : 0.16mg/L(Algae)
4,4'-methylenedianiline	No information available	NOEC : 0.0053mg/L(Crustaceans)	NOEC : 4.0mg/L(Algae)
4-chloroaniline	No information available	NOEC : 0.0032mg/L(Crustaceans)	NOEC : 0.32mg/L(Algae)
4,4'-Methylene bis(2-chloroaniline)	No information available	NOEC : 0.0095mg/L(Crustaceans)	NOEC : 0.54mg/L(Algae)
o-anisidine	NOEC : 25mg/L(Fish)	NOEC : 0.25mg/L(Crustaceans)	NOEC : 7.5mg/L(Algae)
p-phenylenediamine	No information available	NOEC :	NOEC : 0.01mg/L(Algae)

		0.043mg/L(Crustaceans)	
Aniline	NOEC : 1.9mg/L(Fish)	NOEC : 0.0063mg/L(Crustaceans)	NOEC : 3.7mg/L(Algae)

12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Methanol	Low	Low
p-phenylenediamine	Low(Half-life = 56 days)	Low(Half-life = 0.12 days)
m-phenylenediamine	Low(Half-life = 56 days)	Low(Half-life = 0.12 days)
4,4'-oxydianiline	High(Half-life = 360 days)	Low(Half-life = 0.13 days)
4,4'-methylenedianiline	Low(Half-life = 14 days)	Low(Half-life = 0.11 days)
o-anisidine	High(Half-life = 360 days)	Low(Half-life = 0.22 days)
o-toluidine	Low(Half-life = 14 days)	Low(Half-life = 0.16 days)
4,4'-methylenedi-o-toluidine	High	High
3,3'-dimethoxybenzidine	High(Half-life = 360 days)	Low(Half-life = 0.14 days)
4,4'-bi-o-toluidine	Low(Half-life = 14 days)	Low(Half-life = 0.11 days)
2,6-xylydine	High(Half-life = 360 days)	Low(Half-life = 0.14 days)
2-Methoxy-5-methylaniline	High(Half-life = 360 days)	Low(Half-life = 0.12 days)
4,4'-thiodianiline	Low(Half-life = 56 days)	Low(Half-life = 0.15 days)
2,4-xylydine	High	High
Biphenyl-4-ylamine	Low(Half-life = 14 days)	Low(Half-life = 0.25 days)
5-nitro-o-toluidine	Low(Half-life = 56 days)	Low(Half-life = 0.83 days)
3,3'-dichlorobenzidine	High(Half-life = 360 days)	Low(Half-life = 0.38 days)
4-aminoazobenzene	Low(Half-life = 56 days)	Low(Half-life = 0.4 days)
4,4'-Methylene bis(2-chloroaniline)	High(Half-life = 360 days)	Low(Half-life = 0.12 days)
o-Aminoazotoluene	Low(Half-life = 56 days)	Low(Half-life = 0.34 days)

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Methanol	Low	BCF=10
p-phenylenediamine	Low	BCF=38
m-phenylenediamine	Low	BCF=24
4,4'-oxydianiline	Low	Log Kow=1.36
4,4'-methylenedianiline	Low	BCF=15
o-anisidine	Low	Log Kow=1.18
o-toluidine	Low	Log Kow=1.32
4,4'-methylenedi-o-toluidine	Low	Log Kow=3.2761

3,3'-dimethoxybenzidine	Low	Log Kow=1.81
4,4'-bi-o-toluidine	Low	BCF=83
2,6-xylidine	Low	BCF=96.2
2-Methoxy-5-methylaniline	Low	BCF=4.6
4,4'-thiodianiline	Low	Log Kow=2.18
2,4-xylidine	Low	BCF=10
Biphenyl-4-ylamine	Low	Log Kow=2.8
5-nitro-o-toluidine	Low	Log Kow=1.87
3,3'-dichlorobenzidine	Medium	BCF=940
4-aminoazobenzene	Low	BCF=42.4
4,4'-Methylene bis(2-chloroaniline)	Low	BCF=398
o-Aminoazotoluene	Medium	Log Kow=4.2887

12.4 Mobility in soil

Component	log Koc	Remark
Methanol	0.000	
p-phenylenediamine	1.53	20 °C
m-phenylenediamine	0.70	20 °C
4,4'-oxydianiline	1.66	25 °C
4,4'-methylenedianiline	3.848	
o-anisidine	1.512	
o-toluidine	1.68	20 °C
4,4'-methylenedi-o-toluidine	3.76	20 °C
3,3'-dimethoxybenzidine	3.160	
4,4'-bi-o-toluidine	3.874	
2,6-xylidine	2.088	
2-Methoxy-5-methylaniline	1.722	
4,4'-thiodianiline	3.695	
2,4-xylidine	2.079	
Biphenyl-4-ylamine	3.228	
5-nitro-o-toluidine	1.931	
3,3'-dichlorobenzidine	3.874	
4-aminoazobenzene	2.723	
4,4'-Methylene bis(2-chloroaniline)	3.57	20 °C
o-Aminoazotoluene	3.160	

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Methanol	Not PBT/vPvB
p-phenylenediamine	Not PBT/vPvB
m-phenylenediamine	Insufficient information, temporarily unable to evaluate
4-methyl-m-phenylenediamine	Insufficient information, temporarily unable to evaluate
4,4'-oxydianiline	Not PBT/vPvB
p,p'-Diaminodiphenyl	Insufficient information, temporarily unable to evaluate
4,4'-methylenedianiline	Not PBT/vPvB
Aniline	Not PBT/vPvB
o-anisidine	Insufficient information, temporarily unable to evaluate
o-toluidine	Not PBT/vPvB
4,4'-methylenedi-o-toluidine	Insufficient information, temporarily unable to evaluate
3,3'-dimethoxybenzidine	Insufficient information, temporarily unable to evaluate
4,4'-bi-o-toluidine	Insufficient information, temporarily unable to evaluate
2,6-xylydine	Insufficient information, temporarily unable to evaluate
2,4'-Diaminodiphenylmethane	Insufficient information, temporarily unable to evaluate
4-methoxy-m-phenylenediamine	Insufficient information, temporarily unable to evaluate
2-Methoxy-5-methylaniline	Insufficient information, temporarily unable to evaluate
2,4,5-trimethylaniline	Insufficient information, temporarily unable to evaluate
4,4'-thiodianiline	Insufficient information, temporarily unable to evaluate
4-chloroaniline	Not PBT/vPvB
2,4-xylydine	Insufficient information, temporarily unable to evaluate
2-naphthylamine	Insufficient information, temporarily unable to evaluate
2,2'-Methylenedianiline	Insufficient information, temporarily unable to evaluate
Biphenyl-4-ylamine	Insufficient information, temporarily unable to evaluate
4-chloro-o-toluidine	Insufficient information, temporarily unable to evaluate
5-nitro-o-toluidine	Insufficient information, temporarily unable to evaluate
3,3'-dichlorobenzidine	Insufficient information, temporarily unable to evaluate
4-aminoazobenzene	Insufficient information, temporarily unable to evaluate
4,4'-Methylene bis(2-chloroaniline)	Not PBT/vPvB
o-Aminoazotoluene	Insufficient information, temporarily unable to evaluate

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
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Methanol	No information available
p-phenylenediamine	No information available
m-phenylenediamine	No information available
4-methyl-m-phenylenediamine	No information available
4,4'-oxydianiline	No information available
p,p'-Diaminodiphenyl	No information available
4,4'-methylenedianiline	No information available
Aniline	No information available
o-anisidine	No information available
o-toluidine	No information available
4,4'-methylenedi-o-toluidine	No information available
3,3'-dimethoxybenzidine	No information available
4,4'-bi-o-toluidine	No information available
2,6-xylydine	No information available
2,4'-Diaminodiphenylmethane	No information available
4-methoxy-m-phenylenediamine	No information available
2-Methoxy-5-methylaniline	No information available
2,4,5-trimethylaniline	No information available
4,4'-thiodianiline	No information available
4-chloroaniline	No information available
2,4-xylydine	No information available
2-naphthylamine	No information available
2,2'-Methylenedianiline	No information available
Biphenyl-4-ylamine	No information available
4-chloro-o-toluidine	No information available
5-nitro-o-toluidine	No information available
3,3'-dichlorobenzidine	No information available
4-aminoazobenzene	No information available
4,4'-Methylene bis(2-chloroaniline)	No information available
o-Aminoazotoluene	No information available

12.7 Other adverse effects

No information available

13 Disposal considerations

13.1 Waste treatment methods

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	
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IMDG-CODE

14.1 UN number	1673
14.2 UN proper shipping name	PHENYLENEDIAMINES (p-)
14.3 Transport hazard class	6.1
14.4 Packing group	III
14.5 Environmental hazards (Yes or no)	No

IATA-DGR

14.1 UN number	1673
14.2 UN proper shipping name	PHENYLENEDIAMINES (p-)
14.3 Transport hazard class	6.1
14.4 Packing group	III
14.5 Environmental hazards (Yes or no)	No

UN-ADR

14.1 UN number	1673
14.2 UN proper shipping name	PHENYLENEDIAMINES (p-)
14.3 Transport hazard class	6.1
14.4 Packing group	III
14.5 Environmental hazards (Yes or no)	No

Special precautions for user

	Transit should be anti-exposure, rain, high temperature. Strictly prohibited shipping or transportation with acids, alkalis, oxidants, food and food additives etc. Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.
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Maritime transport in bulk according to IMO instruments

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available
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◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Not Available

◆ Transport in bulk in accordance with the IGC Code

Not Available

15 Regulatory information

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

International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
Methanol	√	√	√	√	√	√	√	√	√	√	√	√	√
p-phenylenediamine	√	√	√	√	√	√	√	√	√	√	√	√	√
m-phenylenediamine	√	√	√	√	√	√	√	√	√	√	√	√	√
4-methyl-m-phenylenediamine	√	√	√	√	√	√	√	√	√	×	√	√	√
4,4'-oxydianiline	√	√	√	×	√	√	√	√	√	×	√	√	√
p,p'-Diaminodiphenyl	√	√	√	×	√	√	×	√	×	×	√	√	√
4,4'-methylenedianiline	√	√	√	√	√	√	√	√	√	√	√	√	√
Aniline	√	√	√	√	√	√	√	√	√	√	√	√	√
o-anisidine	√	√	√	√	√	√	√	√	√	×	√	√	√
o-toluidine	√	√	√	√	√	√	√	√	√	×	√	√	√
4,4'-methylenedi-o-toluidine	√	√	√	×	×	×	×	×	√	×	×	√	√
3,3'-dimethoxybenzidine	√	√	√	√	×	√	√	√	√	×	√	√	√
4,4'-bi-o-toluidine	√	√	√	√	√	√	√	√	√	×	√	√	√
2,6-xylydine	√	√	√	√	√	√	√	√	√	×	√	√	√
2,4'-Diaminodiphenylmethane	√	√	√	√	√	√	√	√	√	×	×	√	√
4-methoxy-m-phenylenediamine	×	√	√	√	√	×	√	√	√	×	√	√	√
2-Methoxy-5-methylaniline	√	√	√	×	×	√	√	×	√	√	×	√	√
2,4,5-trimethylaniline	×	√	×	×	×	×	×	×	×	×	×	√	√
4,4'-thiodianiline	√	√	√	×	×	×	√	×	√	×	×	√	√
4-chloroaniline	√	√	√	√	√	√	√	√	√	×	√	√	√
2,4-xylydine	√	√	√	×	√	√	√	√	√	×	√	√	√
2-naphthylamine	√	√	×	√	√	√	√	×	×	×	√	√	√
2,2'-Methylenedianiline	√	√	√	×	×	×	×	√	×	×	×	√	√
Biphenyl-4-ylamine	√	√	√	×	√	√	√	×	×	×	√	√	√
4-chloro-o-toluidine	×	√	√	×	×	×	×	√	√	×	×	√	√
5-nitro-o-toluidine	√	√	√	×	×	√	√	√	√	×	√	√	√
3,3'-dichlorobenzidine	√	√	√	×	√	√	√	√	√	√	√	√	√

4-aminoazobenzene	√	√	√	√	√	√	√	√	√	√	×	√	√	√
4,4'-Methylene bis(2-chloroaniline)	√	√	√	√	√	√	√	√	√	√	×	√	√	√
o-Aminoazotoluene	√	√	√	√	√	√	√	√	√	√	×	√	√	√

- [A] China Inventory of Existing Chemical Substances(IECSC)
 [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)
 [C] United States Toxic Substances Control Act Inventory(TSCA)
 [D] Canadian Domestic Substances List(DSL)
 [E] New Zealand Inventory of Chemicals(NZIoC)
 [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)
 [G] Korea Existing Chemicals Inventory(KECL)
 [H] Australian. Inventory of Industrial Chemical (AIICS)
 [I] Japan Inventory of Existing & New Chemical Substances(ENCS)
 [J] Thailand Existing Chemicals Inventory(TECI)
 [K] Mexico National Inventory of Chemical Substances (INSQ)
 [L] Russia Inventory of Existing Substances (DRAFT)
 [M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
Methanol	×	×	×
p-phenylenediamine	×	×	×
m-phenylenediamine	×	×	×
4-methyl-m-phenylenediamine	×	×	×
4,4'-oxydianiline	×	×	×
p,p'-Diaminodiphenyl	×	×	×
4,4'-methylenedianiline	×	×	×
Aniline	×	×	×
o-anisidine	×	×	×
o-toluidine	×	×	×
4,4'-methylenedi-o-toluidine	×	×	×
3,3'-dimethoxybenzidine	×	×	×
4,4'-bi-o-toluidine	×	×	×
2,6-xylydine	×	×	×
2,4'-Diaminodiphenylmethane	×	×	×
4-methoxy-m-phenylenediamine	×	×	×
2-Methoxy-5-methylaniline	×	×	×
2,4,5-trimethylaniline	×	×	×
4,4'-thiodianiline	×	×	×
4-chloroaniline	×	×	×
2,4-xylydine	×	×	×
2-naphthylamine	×	×	×

2,2'-Methylenedianiline	x	x	x
Biphenyl-4-ylamine	x	x	x
4-chloro-o-toluidine	x	x	x
5-nitro-o-toluidine	x	x	x
3,3'-dichlorobenzidine	x	x	x
4-aminoazobenzene	x	x	x
4,4'-Methylene bis(2-chloroaniline)	x	x	x
o-Aminoazotoluene	x	x	x

【A】 The Montreal Protocol on Substances that Deplete the Ozone Layer

【B】 Stockholm Convention on Persistent Organic Pollutants (POPs)

【C】 Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

Component	A	B	C	D	E	F	G	H	I
Methanol	x	x	√	√	√	√	x	x	x
p-phenylenediamine	x	x	x	√	√	x	x	x	x
m-phenylenediamine	x	x	x	√	√	√	x	x	x
4-methyl-m-phenylenediamine	√	x	√	√	√	x	x	x	x
4,4'-oxydianiline	√	x	√	√	√	x	x	x	x
p,p'-Diaminodiphenyl	x	x	√	√	x	x	x	x	x
4,4'-methylenedianiline	√	√	√	√	√	x	x	x	x
Aniline	x	x	x	√	√	x	x	x	x
o-anisidine	√	x	√	√	√	x	x	x	x
o-toluidine	√	x	√	√	√	x	x	x	x
4,4'-methylenedi-o-toluidine	√	x	√	√	√	x	x	x	x
3,3'-dimethoxybenzidine	x	x	√	√	x	x	x	x	x
4,4'-bi-o-toluidine	x	x	√	√	x	x	x	x	x
2,6-xylidine	x	x	x	√	√	x	x	x	x
2,4'-Diaminodiphenylmethane	x	x	x	√	x	x	x	x	x
4-methoxy-m-phenylenediamine	x	x	√	√	x	x	x	x	x
2-Methoxy-5-methylaniline	√	x	√	√	√	x	x	x	x
2,4,5-trimethylaniline	x	x	√	√	x	x	x	x	x
4,4'-thiodianiline	x	x	√	√	x	x	x	x	x
4-chloroaniline	x	x	√	√	√	x	x	x	x
2,4-xylidine	x	x	x	√	√	x	x	x	x
2-naphthylamine	x	x	√	√	x	x	x	x	x

2,2'-Methylenedianiline	x	x	x	√	x	x	x	x	x
Biphenyl-4-ylamine	√	x	√	√	x	x	x	x	x
4-chloro-o-toluidine	x	x	√	√	x	x	x	x	x
5-nitro-o-toluidine	x	x	x	√	√	x	x	x	x
3,3'-dichlorobenzidine	x	x	√	√	x	x	x	x	x
4-aminoazobenzene	√	x	√	√	√	x	x	x	x
4,4'-Methylene bis(2-chloroaniline)	√	√	√	√	√	x	x	x	x
o-Aminoazotoluene	√	x	√	√	x	x	x	x	x

[A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation

[B] Substances requiring authorisation under EU REACH regulation

[C] Substances restricted under EU REACH

[D] Pre-registered substances under EU REACH

[E] Registered substances under EU REACH

[F] Substance Evaluation – CoRAP under EU REACH

[G] List of priority substances under EU water policy (Directive 2455/2001/EC)

[H] Substances subject to POPs Regulation

[I] Substances proposed as POPs

Note:

“√” Indicates that the substance included in the regulations.

“x” No data or not included in the regulations.

German water hazard class(WGK)

Component	WGK	Remark
Methanol	WGK 2	
p-phenylenediamine	WGK 3	
m-phenylenediamine	WGK 3	
4-methyl-m-phenylenediamine	WGK 3	
4,4'-oxydianiline	WGK 3	
p,p'-Diaminodiphenyl	WGK 3	
4,4'-methylenedianiline	WGK 3	
Aniline	WGK 3	
o-anisidine	WGK 3	
o-toluidine	WGK 3	
4,4'-methylenedi-o-toluidine	WGK 3	
2,6-xylydine	WGK 3	
4-methoxy-m-phenylenediamine	WGK 3	
2-Methoxy-5-methylaniline	WGK 3	
4-chloroaniline	WGK 3	
2,4-xylydine	WGK 3	
2-naphthylamine	WGK 3	

Biphenyl-4-ylamine	WGK 3	
4-chloro-o-toluidine	WGK 3	
5-nitro-o-toluidine	WGK 3	
3,3'-dichlorobenzidine	WGK 3	
4-aminoazobenzene	WGK 3	
o-Aminoazotoluene	WGK 3	

- 【WGK 1】 slightly hazardous to water
 【WGK 2】 obviously hazardous to water
 【WGK 3】 highly hazardous to water
 【nwg】 non-hazardous to water
 【awg】 hazardous to water in general

German technical instructions on air quality control(TA LUFT)

Component	TA LUFT	Remark
Methanol	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
p-phenylenediamine	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
m-phenylenediamine	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
4-methyl-m-phenylenediamine	Chapter 5.2.7.1.1 Carcinogenic substances. Class II. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 1,5 g/hr or Mass conc.: 0,5 mg/m ³	
4,4'-oxydianiline	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
p,p'-Diaminodiphenyl	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	

4,4'-methylenedianiline	Chapter 5.2.7.1.1 Carcinogenic substances. Class II. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:1,5 g/hr or Mass conc.:0,5 mg/m ³	
Aniline	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m ³	
o-anisidine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
o-toluidine	Chapter 5.2.7.1.1 Carcinogenic substances. Class II. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:1,5 g/hr or Mass conc.:0,5 mg/m ³	
4,4'-methylenedi-o-toluidine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
3,3'-dimethoxybenzidine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
4,4'-bi-o-toluidine	Chapter 5.2.7.1.1 Carcinogenic substances. Class II. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:1,5 g/hr or Mass conc.:0,5 mg/m ³ TECHNICAL INSTRUCTIONS ON AIR QUALITY CONTROL Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest	

	potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
2,6-xylydine	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
4-methoxy-m-phenylenediamine	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
2-Methoxy-5-methylaniline	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
2,4,5-trimethylaniline	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
4,4'-thiodianiline	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
4-chloroaniline	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of	

	data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
2,4-xylylidine	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m ³	
2-naphthylamine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
Biphenyl-4-ylamine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
4-chloro-o-toluidine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
5-nitro-o-toluidine	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m ³	
3,3'-dichlorobenzidine	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data.Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
4-aminoazobenzene	Chapter 5.2.7.1.1 Carcinogenic SubstancesThe substance must be assigned to the class (I, II or III)	

	whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
4,4'-Methylene bis(2-chloroaniline)	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	
o-Aminoazotoluene	Chapter 5.2.7.1.1 Carcinogenic Substances The substance must be assigned to the class (I, II or III) whose substances have the nearest potency. We can not accomplish this evaluation due to insufficiency of data. Carcinogenic substances not mentioned by name and for which no information on potency is available should be assigned to Class I as a precautionary measure.	

German technical rules for hazardous substances (TRGS)

Component	TRGS	Remark
Methanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
p-phenylenediamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
m-phenylenediamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
4-methyl-m-phenylenediamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
4,4'-oxydianiline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
p,p'-Diaminodiphenyl	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS	

	510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
4,4'-methylenedianiline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
Aniline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
o-anisidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
o-toluidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
4,4'-methylenedi-o-toluidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
3,3'-dimethoxybenzidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
4,4'-bi-o-toluidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
2,6-xylydine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
4-methoxy-m-phenylenediamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 560	
2-Methoxy-5-methylaniline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
2,4,5-trimethylaniline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
4,4'-thiodianiline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
4-chloroaniline	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS	

	723 TRGS 724 TRGS 560	
2,4-xylydine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
2-naphthylamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
Biphenyl-4-ylamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
4-chloro-o-toluidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
5-nitro-o-toluidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
3,3'-dichlorobenzidine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
4-aminoazobenzene	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	
4,4'-Methylene bis(2-chloroaniline)	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 560	
o-Aminoazotoluene	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	

15.2 Chemical safety assessment

	No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.
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16 Other information

Information on revision

Creation Date	2025/12/24
Revision Date	-
Reason for revision	-

Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{ow}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.