

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

HUNTSMAN

Enriching lives through innovation

ARADUR® 5052 CH

Version	Revision Date:	SDS Number:	Date of last issue: 10.06.2020
3.0	17.06.2021	400001008730	Date of first issue: 01.12.2017

Print Date 18.06.2021

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

1.1 Product identifier

Trade name : ARADUR® 5052 CH

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

Use of the Substance/Mixture : Hardener

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40
E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone number

Emergency telephone number : EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 3	H331: Toxic if inhaled.
Acute toxicity, Category 3	H311: Toxic in contact with skin.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - repeated	H373: May cause damage to organs through

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exposure, Category 2

prolonged or repeated exposure.

Long-term (chronic) aquatic hazard, Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H311 + H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P260 Do not breathe mist or vapours.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Hazardous components which must be listed on the label:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)

3-aminomethyl-3,5,5-trimethylcyclohexylamine

2,4,6-tris(dimethylaminomethyl)phenol

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salicylic acid

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5 229-962-1 612-110-00-1	Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT RE 2; H373 (Liver, Kidney, Adrenal gland, Heart, Blood) Aquatic Chronic 2; H411	>= 50 - < 70
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2 220-666-8 612-067-00-9	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412	>= 30 - < 50
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2 202-013-9 603-069-00-0	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318	>= 3 - < 5
salicylic acid	69-72-7 200-712-3 607-732-00-5	Acute Tox. 4; H302 Eye Dam. 1; H318 Repr. 2; H361d	>= 1 - < 3

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Neutralise with acid.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

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6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Hygiene measures : Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.
- Advice on common storage : Do not store near acids.
- Recommended storage temperature : 2 - 40 °C
- Further information on storage stability : Stable under normal conditions.

7.3 Specific end use(s)

- Specific use(s) : No data available

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Workers	Inhalation	Long-term systemic effects	0.6 mg/m ³
	Workers	Inhalation	Long-term local effects	0.96 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.06 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Workers	Inhalation	Long-term systemic effects	0.53 mg/m ³
	Workers	Inhalation	Acute systemic effects	2.1 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.150 mg/kg
	Workers	Dermal	Acute systemic effects	0.600 mg/kg
	Consumers	Inhalation	Long-term systemic effects	0.130 mg/m ³
	Consumers	Inhalation	Acute systemic effects	0.130 mg/m ³
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Consumers	Dermal	Long-term systemic effects	0.075 mg/kg
	Consumers	Dermal	Acute systemic effects	0.075 mg/kg
	Consumers	Oral	Long-term systemic effects	0.075 mg/kg
	Workers	Inhalation	Long-term local effects	0.073 mg/m ³
salicylic acid	Workers	Inhalation	Acute local effects	0.073 mg/m ³
	Consumers	Oral	Long-term systemic effects	0.526 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	5 mg/m ³
	Workers	Inhalation	Long-term local effects	5 mg/m ³
	Workers	Dermal	Long-term systemic effects	2.3 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4 mg/m ³
	Consumers	Dermal	Long-term systemic effects	1 mg/kg bw/day

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	Consumers	Oral	Long-term systemic effects	1 mg/kg bw/day
	Consumers	Oral	Acute effects, Short-term exposure	4 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Fresh water	0.4 mg/l
	Marine water	0.04 mg/l
	Freshwater - intermittent	0.046 mg/l
	Sewage treatment plant	1.6 mg/l
	Fresh water sediment	17.4 mg/kg
	Marine sediment	1.74 mg/kg
	Soil	4.56 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Fresh water	0.046 mg/l
	Marine water	0.005 mg/l
Remarks:	Assessment Factors	
	Sewage treatment plant	0.262 mg/l
	Assessment Factors	
	Freshwater - intermittent	0.46 mg/l
	Soil	0.025 mg/kg
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Fresh water	0.06 mg/l
	Assessment Factors	
	Marine water	0.006 mg/l
	Assessment Factors	
	Sewage treatment plant	3.18 mg/l
	Assessment Factors	
	Fresh water sediment	5.784 mg/kg dry weight (d.w.)
	Equilibrium method	
	Marine sediment	0.578 mg/kg dry weight (d.w.)
	Soil	1.121 mg/kg dry weight (d.w.)
salicylic acid	Marine water	0.02 mg/l
	Sewage treatment plant	162 mg/l
	Fresh water sediment	1.42 mg/kg dry

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		weight (d.w.)
	Marine sediment	0.142 mg/kg dry weight (d.w.)
	Soil	0.166 mg/kg dry weight (d.w.)
	Secondary Poisoning	

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Equipment should conform to EN 14387

Filter type : Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : clear

Odour : slight

Odour Threshold : No data is available on the product itself.

pH : 11 - 12 (20 °C)
Concentration: 500 g/l

Melting point/freezing point : No data available

Boiling point : 135 °C

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Flash point	:	110 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Burning rate	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Vapour pressure	:	< 0.012 hPa (20 °C)
Relative vapour density	:	No data is available on the product itself.
Relative density	:	0.93 - 0.95 (25 °C)
Density	:	0.93 - 0.95 g/cm ³ (25 °C)
Solubility(ies)	:	
Water solubility	:	partly soluble (20 °C)
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	> 200 °C
Viscosity	:	
Viscosity, dynamic	:	40 - 60 mPa.s (25 °C)
Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	No data is available on the product itself.

9.2 Other information

Molecular weight	:	No data available
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SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

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10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Strong acids
Strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide
carbon monoxide
Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

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

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : 634.9 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Acute toxicity estimate : 0.7636 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : 455.12 mg/kg
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Species: Rabbit
Method: OECD Test Guideline 404
Result: Causes burns.

3-aminomethyl-3,5,5-trimethylcyclohexylamine:
Species: Rabbit
Assessment: Causes burns.

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2,4,6-tris(dimethylaminomethyl)phenol:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Corrosive after 1 to 4 hours of exposure

Species: synthetic macromolecular bio-barrier
Method: OECD Test Guideline 435
Result: Corrosive after 1 to 4 hours of exposure

salicylic acid:
Species: Rabbit
Assessment: No skin irritation
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Serious eye damage/eye irritation

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Species: Rabbit
Exposure time: 24 h
Assessment: Corrosive
Method: OECD Test Guideline 405
Result: Corrosive

2,4,6-tris(dimethylaminomethyl)phenol:
Species: Rabbit
Assessment: Corrosive
Method: Other guidelines
Result: Corrosive

salicylic acid:
Species: Rabbit
Assessment: Risk of serious damage to eyes.
Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):
Test Type: Maximisation Test
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

3-aminomethyl-3,5,5-trimethylcyclohexylamine:
Exposure routes: Skin
Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Method: OECD Test Guideline 406
Result: Causes sensitisation.

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2,4,6-tris(dimethylaminomethyl)phenol:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

salicylic acid:
Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin
Species: Mouse
Method: OECD Test Guideline 429
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

: Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Concentration: 2 mg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

: Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 1375 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473

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Result: negative

: Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

2,4,6-tris(dimethylaminomethyl)phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Concentration: 2500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

salicylic acid:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

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Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Dose: 500 mg/kg
Method: Directive 67/548/EEC, Annex V, B.12.
Result: negative

salicylic acid:
Genotoxicity in vivo : Test Type: sister chromatid exchange assay
Test species: Mouse (male)
Cell type: Bone marrow
Application Route: Oral
Dose: 350 mg/kg
Method: OPPTS 870.5915
Result: negative

Test Type: sister chromatid exchange assay
Test species: Mouse (male)
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Dose: 20/50/100 mg/kg
Method: OPPTS 870.5915
Result: negative

Test species: Mouse (male)
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Dose: 50/100/200 mg/kg
Method: OECD Test Guideline 475
Result: negative

Test species: Mouse (male)
Cell type: Bone marrow
Application Route: Oral
Dose: 350 mg/kg
Method: OECD Test Guideline 475
Result: negative

Germ cell mutagenicity-
Assessment : No data available

Carcinogenicity

Components:

salicylic acid:
Species: Rat, male and female
Application Route: Oral
Exposure time: 24 month(s)
Dose: 0,50,250,500,1000 mg/kg

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Frequency of Treatment: 7 daily
No observed adverse effect level: 500 mg/kg bw/day
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Dose: 0, 15, 50 and 100 mg/kg/day
Frequency of Treatment: 7 days/week
General Toxicity - Parent: No observed adverse effect level: 15 mg/kg body weight
General Toxicity F1: No observed adverse effect level: 15 mg/kg body weight
Method: OECD Test Guideline 422

2,4,6-tris(dimethylaminomethyl)phenol:

Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Remarks: No significant adverse effects were reported

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Effects on foetal development : Species: Rat
Application Route: Oral
Dose: 5, 15 and 45 mg/kg bw /day
Frequency of Treatment: 7 days/week
General Toxicity Maternal: No observed adverse effect level: 5 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: 45 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species: Rat, female
Application Route: Oral
Dose: 10/50/250 milligram per kilogram
General Toxicity Maternal: No-observed-effect level: 50 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

salicylic acid:

Species: Rabbit, female
Application Route: Oral
Duration of Single Treatment: 3 - 13 d

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General Toxicity Maternal: No observed adverse effect level:
125 mg/kg body weight
Developmental Toxicity: No observed adverse effect level:
250 mg/kg body weight
Method: OECD Test Guideline 414
Remarks: Information given is based on data obtained from similar substances.

Components:

salicylic acid:

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

No data available

STOT - repeated exposure

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Exposure routes: Ingestion

Target Organs: Liver, Kidney, Adrenal gland, Heart, Blood

Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Species: Rat, male and female

NOEC: 12

Application Route: Inhalation

Test atmosphere: vapour

Number of exposures: 5 days/week

Method: OECD Test Guideline 413

Species: Rat, male and female

NOAEL: 2.5 mg/kg

Application Route: oral (gavage)

Exposure time: 3 months Number of exposures: 5 days/week

Dose: 2.5, 12, 60 mg/kg bw/day

Method: OECD Test Guideline 408

Target Organs: Liver, Blood, Kidney, Adrenal gland, Heart

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species: Rat, male and female

NOAEL: 60 mg/kg

Application Route: Ingestion

Exposure time: 90 d Dose: 20, 60, 160 mg/kg

Method: OECD Test Guideline 408

Target Organs: Kidney

Species: Rat, male and female

NOEC: 200

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Application Route: Inhalation
Test atmosphere: dust/mist
Exposure time: 216 h Number of exposures: 6h
Method: Subacute toxicity
Target Organs: respiratory tract irritation

2,4,6-tris(dimethylaminomethyl)phenol:
Species: Rat, male and female
NOEL: 15 mg/kg
Application Route: Ingestion
Exposure time: 1,032 h Number of exposures: 7 d
Method: Subacute toxicity

salicylic acid:
Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: oral (feed)
Exposure time: 2 yr Number of exposures: 7 d
Dose: 0, 50, 250, 500, 1000 mg/kg bw
Method: Chronic toxicity
Remarks: Information given is based on data obtained from similar substances.

Species: Rat, female
NOEC: 700
Application Route: inhalation (vapour)
Exposure time: 7 h 4 Weeks Number of exposures: 5 days/week
Dose: 635 mg/m³
Method: OECD Test Guideline 412
GLP: no
Remarks: Information given is based on data obtained from similar substances.

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Experience with human exposure

General Information: No data available

Inhalation: No data available

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Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 22.4 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4.57 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Other): 7.9 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC20 (activated sludge): 160 mg/l
Exposure time: 30 min
Test Type: static test
Method: ISO 8192

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 4 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

Ecotoxicology Assessment
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 110 mg/l
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23 mg/l
End point: mortality
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 37 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

EC10 (Desmodesmus subspicatus (green algae)): 11.2 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

Toxicity to microorganisms : EC10 (Pseudomonas putida): 1,120 mg/l
Exposure time: 18 h
Test Type: static test
Method: Measured

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 3 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 202
Remarks: No-observed-effect level

2,4,6-tris(dimethylaminomethyl)phenol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 175 mg/l

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- Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Palaeomonetes vulgaris (Grass shrimp)): 718 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Test substance: Marine water
- Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 84 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
- NOEC (Desmodesmus subspicatus (green algae)): 6.25 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
- salicylic acid:
- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1,370 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 203
GLP: no
Remarks: Information given is based on data obtained from similar substances.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 870 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to microorganisms : NOEC (Pseudomonas putida): 162 mg/l
Exposure time: 16 h
Test Type: static test
Test substance: Fresh water
Method: ISO
Remarks: Information given is based on data obtained from similar substances.

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 10 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

12.2 Persistence and degradability

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Inoculum: activated sludge
Result: Not biodegradable
Biodegradation: < 1 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 6.9 mg/l
Result: Not readily biodegradable.
Biodegradation: 8 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.A.

2,4,6-tris(dimethylaminomethyl)phenol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 2 mg/l
Result: Not biodegradable
Biodegradation: 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

salicylic acid:

Biodegradability : Test Type: aerobic
Inoculum: Mixture
Concentration: 100 mg/l
Result: Readily biodegradable.
Biodegradation: 88.1 %
Related to: Biochemical oxygen demand
Exposure time: 14 d
Method: OECD Test Guideline 301C
GLP: No information available.

Test Type: aerobic
Inoculum: activated sludge, non-adapted
Result: Inherently biodegradable.
Biodegradation: > 90 %
Related to: Dissolved organic carbon (DOC)

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Exposure time: 4 d
Method: Directive 67/548/EEC, Annex V, C.9
GLP: no

12.3 Bioaccumulative potential

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 28 d
Bioconcentration factor (BCF): < 60
Test substance: Fresh water
Method: flow-through test
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 2.3 (23 °C)
pH: 10
Method: OECD Test Guideline 107

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Partition coefficient: n-octanol/water : log Pow: 0.99 (23 °C)
pH: 6.34
Method: OECD Test Guideline 107

2,4,6-tris(dimethylaminomethyl)phenol:

Partition coefficient: n-octanol/water : Pow: \geq 0.219 (21.5 °C)
log Pow: -0.66 (21.5 °C)
Method: OPPTS 830.7550

salicylic acid:

Partition coefficient: n-octanol/water : log Pow: 2.25 (25 °C)
Method: OECD Test Guideline 117

12.4 Mobility in soil

Components:

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Distribution among environmental compartments : Koc: 1195

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Distribution among environmental compartments : Koc: 928

salicylic acid:

Distribution among environmental compartments : Koc: 35
Method: OECD Test Guideline 121

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

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12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 2922
RID : UN 2922
IMDG : UN 2922
IATA : UN 2922

14.2 UN proper shipping name

ADR : CORROSIVE LIQUID, TOXIC, N.O.S.
(cycloaliphatic polyamine, ISOPHORONE DIAMINE)
RID : CORROSIVE LIQUID, TOXIC, N.O.S.
(cycloaliphatic polyamine, ISOPHORONE DIAMINE)
IMDG : CORROSIVE LIQUID, TOXIC, N.O.S.
(cycloaliphatic polyamine, ISOPHORONE DIAMINE)
IATA : Corrosive liquid, toxic, n.o.s.
(cycloaliphatic polyamine, ISOPHORONE DIAMINE)

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14.3 Transport hazard class(es)

ADR : 8
RID : 8
IMDG : 8
IATA : 8

14.4 Packing group

ADR
Packing group : II
Classification Code : CT1
Hazard Identification Number : 86
Labels : 8 (6.1)
Tunnel restriction code : (E)

RID
Packing group : II
Classification Code : CT1
Hazard Identification Number : 86
Labels : 8 (6.1)

IMDG
Packing group : II
Labels : 8 (6.1)
EmS Code : F-A, S-B

IATA (Cargo)
Packing instruction (cargo aircraft) : 855
Packing instruction (LQ) : Y840
Packing group : II
Labels : Corrosive, Toxic

IATA (Passenger)
Packing instruction (passenger aircraft) : 851
Packing instruction (LQ) : Y840
Packing group : II
Labels : Corrosive, Toxic

14.5 Environmental hazards

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes(cycloaliphatic polyamine)

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

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SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
H2 ACUTE TOXIC

E2 ENVIRONMENTAL HAZARDS

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIIC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

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Inventories

AICS (Australia), AIIC (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Full text of H-Statements

H302	: Harmful if swallowed.
H311	: Toxic in contact with skin.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and eye damage.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
H361d	: Suspected of damaging the unborn child.
H373	: May cause damage to organs through prolonged or repeated exposure if swallowed.
H411	: Toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure

Further information

Classification of the mixture:

Acute Tox. 4	H302
Acute Tox. 3	H331
Acute Tox. 3	H311
Skin Corr. 1	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
STOT RE 2	H373
Aquatic Chronic 2	H411

Classification procedure:

Calculation method
Calculation method
Calculation method
Based on product data or assessment
Based on product data or assessment
Calculation method
Calculation method
Calculation method

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