

ARDROX® AV 25 (R134a)Aerosol Spraydose 10 x 400 ML

Version: 2.0

Revision Date 03.06.2014

Print Date 19.11.2014

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

1.1 Product identifier

Trade name : ARDROX® AV 25 (R134a)Aerosol Spraydose 10 x 400 ML

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

Use of the Sub-
stance/Mixture : Corrosion inhibitor

Recommended restrictions
on use : None known.

1.3 Details of the supplier of the safety data sheet

Company : Chemetall GmbH
Trakehner Strasse 3
60487 Frankfurt a.M.

Lead Organisation : Surface Treatment
Telephone : +49(0)69 7165-0
Telefax : +49(0)69 7165-3567

Contact person product safety
Telephone : +49(0)6971652832
E-mail address : msds.de@chemetall.com

1.4 Emergency telephone number

Emergency telephone
number : +49(0)5326 51-0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 1 H223: Flammable aerosol.
H229: Pressurized container: May burst if heated.
H336: May cause drowsiness or dizziness.
Specific target organ toxicity - single ex-
posure, Category 3, Central nervous
system

Classification (67/548/EEC, 1999/45/EC)

Flammable R10: Flammable.
R66: Repeated exposure may cause skin dryness
or cracking.

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R67: Vapours may cause drowsiness and dizziness.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: H223 Flammable aerosol.
H229 Pressurized container: May burst if heated.
H336 May cause drowsiness or dizziness.

: EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements

: **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262 Do not get in eyes, on skin, or on clothing.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

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Hazardous components which must be listed on the label:

- Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Labelling according to EC Directives (1999/45/EC)

Hazard pictograms

:



Flammable

R-phrases(s)

: R10

R66

R67

Flammable.

Repeated exposure may cause skin dryness or cracking.

Vapours may cause drowsiness and dizziness.

S-phrases(s)

: S16

S23

S24/25

S36/37/39

S51

S60

Keep away from sources of ignition - No smoking.

Do not breathe spray.

Avoid contact with skin and eyes.

Wear suitable protective clothing, gloves and eye/face protection.

Use only in well-ventilated areas.

This material and its container must be disposed of as hazardous waste.

Special labelling of certain mixtures

: Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.
Do not pierce or burn, even after use.
Do not spray on a naked flame or any incandescent material.
Keep away from sources of ignition - No smoking.
Keep out of the reach of children.

2.3 Other hazards

The information required is contained in this Material Safety Data Sheet.

SECTION 3: Composition/information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

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Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	919-857-5 01-2119463258-33	R10 Xn; R65 R66 R67 Nota H, Nota P	Flam. Liq. 3; H226 Asp. Tox. 1; H304 STOT SE 3; H336	>= 25 - < 50
Naphtha (petroleum), hydrotreated heavy (benzene < 0,1 %)	64742-48-9 265-150-3 01-2119463258-33	R10 Xn; R65 R66 Nota H, Nota P	Asp. Tox. 1; H304 Flam. Liq. 3; H226	>= 1 - < 2.5

Substances with a workplace exposure limit :

1,1,1,2-Tetrafluoroethane	811-97-2 212-377-0		Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.	>= 25 - < 50
1-Methoxy-2-propanol	107-98-2 203-539-1 01-2119457435-35	R10 R67	Flam. Liq. 3; H226 STOT SE 3; H336	>= 2.5 - < 10

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

For the full text of the Notas mentioned in this Section, see Section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|-------------------------|---|
| General advice | : First-aid crew: Ensure self-protection.
Move out of dangerous area.
Take off contaminated clothing and shoes immediately. |
| If inhaled | : Move to fresh air.
If symptoms persist, call a physician. |
| In case of skin contact | : Wash off with soap and plenty of water.
If symptoms persist, call a physician. |
| In case of eye contact | : Rinse immediately with plenty of water, also under the eyelids.
Consult a physician. |
| If swallowed | : Rinse mouth with water.
Do NOT induce vomiting.
Consult a physician. |

4.2 Most important symptoms and effects, both acute and delayed

- | | |
|----------|---|
| Symptoms | : No information available. |
| Risks | : May cause drowsiness or dizziness.
Repeated exposure may cause skin dryness or cracking. |

4.3 Indication of any immediate medical attention and special treatment needed

- | | |
|-----------|--|
| Treatment | : Treat symptomatically.
For specialist advice physicians should contact the Poisons Information Service. |
|-----------|--|

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|--------------------------------|--|
| Suitable extinguishing media | : Carbon dioxide (CO ₂)
Dry powder
Alcohol-resistant foam
Water spray |
| Unsuitable extinguishing media | : High volume water jet |

5.2 Special hazards arising from the substance or mixture

- | | |
|-------------------------------|---|
| Specific hazards during fire- | : May form toxic gases on heating or in case of fire. |
|-------------------------------|---|

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fighting

Carbon monoxide
Carbon dioxide (CO₂)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Further information : Use water spray to cool unopened containers.
Risk of bursting.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Ensure adequate ventilation.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

See chapter 8 and 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.
Floor level ventilation required.
Have eye wash bottle or eye rinse ready at the work place.
To avoid risks to man and the environment, comply with the instructions for use.

Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
Vapours may form explosive mixtures with air.
Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

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Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place.
Store in a place accessible by authorized persons only.
To maintain product quality, do not store in heat or direct sunlight.

Storage temperature : < 50 °C

7.3 Specific end use(s)

Specific use(s) : Corrosion inhibitor

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
1,1,1,2-Tetrafluoroethane	811-97-2	TWA	1,000 ppm 4,240 mg/m ³	2005-04-06	GB EH40
Further information	: 2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used				
1-Methoxy-2-propanol	107-98-2	TWA	100 ppm 375 mg/m ³	2000-06-16	2000/39/EC
Further information	: skin: Identifies the possibility of significant uptake through the skin Indicative				
	107-98-2	STEL	150 ppm 568 mg/m ³	2000-06-16	2000/39/EC
Further information	: skin: Identifies the possibility of significant uptake through the skin Indicative				
	107-98-2	TWA	100 ppm 375 mg/m ³	2005-04-06	GB EH40
Further information	: Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.				
	107-98-2	STEL	150 ppm	2005-04-06	GB EH40

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			560 mg/m ³		
Further information	:	Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			

DNEL/DMEL
 Hydrocarbons, C₉-C₁₁, n-alkanes, isoalkanes, cyclics,
 < 2% aromatics

 : End Use: DNEL, Industrial use, Workers
 Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 208 mg/kg bw/d

 End Use: DNEL, Industrial use, Workers
 Exposure routes: Inhalation
 Potential health effects: Long-term systemic effects
 Value: 871 mg/m³

1,1,1,2-Tetrafluoroethane

 : End Use: DNEL, Workers, Industrial use
 Exposure routes: Inhalation
 Potential health effects: Long-term systemic effects
 Value: 13936 mg/m³

1-Methoxy-2-propanol

 : End Use: DNEL, Industrial use, Workers
 Exposure routes: Inhalation
 Potential health effects: Acute local effects
 Value: 553.5 mg/m³

 End Use: DNEL, Industrial use, Workers
 Exposure routes: Inhalation
 Potential health effects: Long-term systemic effects
 Value: 369 mg/m³

 End Use: DNEL, Industrial use, Workers
 Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 50.6 mg/kg
PNEC

1-Methoxy-2-propanol

 : Fresh water
 Value: 10 mg/l

 Behaviour in waste water treatment plants
 Value: 100 mg/l

Fresh water sediment

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Value: 41.6 mg/kg

Marine sediment
Value: 4.17 mg/kg

Soil
Value: 2.47 mg/kg

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.
Electrical equipment should be protected to the appropriate standard.
Use only explosion-proof equipment.

Personal protective equipment

- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
Recommended Filter type:
AX-P2
- Hand protection : Nitrile rubber
Neoprene gloves
butyl-rubber
Protective gloves complying with EN 374.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Eye protection : Eye protection (EN 166)
Tightly fitting safety goggles
- Skin and body protection : Chemical resistant protective clothing according to DIN EN 13034 (Type 6)
- Hygiene measures : Take off contaminated clothing and shoes immediately.
Keep away from food, drink and animal feedingstuffs.
Wash hands before breaks and immediately after handling the product.
Avoid contact with skin and eyes.
Do not breathe vapour.
Do not breathe spray.

Environmental exposure controls

- General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: aerosol
Colour	: light brown
Odour	: solvent-like
Flash point	: 31 °C Active substance
Ignition temperature	: > 200 °C

9.2 Other information

Explosivity : Vapours may form explosive mixture with air.

Directive 1999/13/EC on the limitation of emissions of volatile organic compounds : Value: 36.9 %

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.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.
Pressurized container: May burst if heated.

10.4 Conditions to avoid

Conditions to avoid : Keep away from open flames, hot surfaces and sources of ignition.
Strong sunlight for prolonged periods.

10.5 Incompatible materials

10.6 Hazardous decomposition products

Risk of decomposition. : No decomposition if stored and applied as directed.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : LD50: > 5,000 mg/kg
Species: rat
Method: OECD Test Guideline 401

Naphtha (petroleum), hydrotreated heavy (benzene < 0,1 %) : LD50: > 5,000 mg/kg
Species: rat

1-Methoxy-2-propanol : LD50: 5,000 mg/kg
Species: rat

Acute inhalation toxicity

1,1,1,2-Tetrafluoroethane : LC50: > 500000 ppm
Exposure time: 4 h
Species: rat

1-Methoxy-2-propanol : LC50: 6 mg/l
Exposure time: 4 h
Species: rat

Acute dermal toxicity

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : LD50: > 5,000 mg/kg
Species: rabbit
Method: OECD Test Guideline 402

Naphtha (petroleum), hydrotreated heavy (benzene < 0,1 %) : LD50: > 2,000 mg/kg
Species: rabbit

1-Methoxy-2-propanol : LD50: 13,500 mg/kg
Species: rat

Skin corrosion/irritation

Skin irritation : May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation

Eye irritation : May cause eye irritation with susceptible persons.

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Respiratory or skin sensitisation

Sensitisation : No data available

Teratogenicity

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : Species: rat
Animal testing did not show any effects on foetal development.

Neurological effects : May cause drowsiness or dizziness.

Toxicology Assessment

Repeated dose toxicity : Repeated exposure may cause skin dryness or cracking.

SECTION 12: Ecological information

12.1 Toxicity

Ecotoxicology studies for the product are not available.

Toxicity to fish

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : Limit Test LC50: > 1,000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 203

1,1,1,2-Tetrafluoroethane : LC50: 450 mg/l
Exposure time: 24 h
Salmo gairdneri

Toxicity to daphnia and other aquatic invertebrates

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : Limit Test EC50: > 1,000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

1,1,1,2-Tetrafluoroethane : EC50: 980 mg/l
Exposure time: 24 h
Species: Daphnia magna (Water flea)

Toxicity to algae

Hydrocarbons, C9-C11, n- : IC50: > 1,000 mg/l

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alkanes, isoalkanes, cyclics,
< 2% aromatics

Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)

NOEC: 100 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)

Toxicity to bacteria
1,1,1,2-Tetrafluoroethane

: EC10: > 730 mg/l
Exposure time: 6 h
Species: Pseudomonas putida

12.2 Persistence and degradability

Biodegradability : No data available

12.3 Bioaccumulative potential

Bioaccumulation : Bioaccumulation is unlikely.

12.4 Mobility in soil

Distribution among environmental compartments : No data available

12.5 Results of PBT and vPvB assessment

This mixture does not contain substances considered to be persistent, bioaccumulating and toxic (PBT)., This mixture does not contain substances considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Additional ecological information : slightly water endangering
Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Dispose of as unused product.

Waste Code : Waste codes should be assigned by the user, preferably in

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discussion with the waste disposal authorities.

SECTION 14: Transport information

ADR

UN number : 1950
UN proper shipping name : AEROSOLS
Transport hazard class(es) : 2
Classification Code : 5F
Limited Quantity (LQ) Inner : 1.00 L
Packaging
Maximum quantity : 30.00 KG
Labels : 2.1
Tunnel restriction code : (D)
Environmentally hazardous : no

IATA

UN number : 1950
Description of the goods : Aerosols, flammable
Class : 2.1
Labels : 2.1

IATA_C

Packing instruction (cargo aircraft) : 203
Packing instruction (LQ) : Y203
Maximum quantity : 150.00 KG
Environmentally hazardous : no

IATA_P

Packing instruction (passenger aircraft) : 203
Packing instruction (LQ) : Y203
Maximum quantity : 75.00 KG
Environmentally hazardous : no

IMDG

UN number : 1950
Description of the goods : AEROSOLS
Class : 2.1
Labels : 2.1
EmS Number 1 : F-D
EmS Number 2 : S-U
Marine pollutant : no

**Shaded from sources of heat.
"IMDG-Code segregation group not applicable".**

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**Shaded from sources of heat.
"IMDG-Code segregation group not applicable".**

RID

UN number	: 1950
Description of the goods	: AEROSOLS
Transport hazard class(es)	: 2
Classification Code	: 5F
Hazard Identification Number	: 23
Labels	: 2.1
Limited Quantity (LQ) Inner	: 1.00 L
Packaging	
Maximum quantity	: 30.00 KG
Environmentally hazardous	: no

SECTION 15: Regulatory information

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

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).

Water contaminating class (Germany): WGK 1 slightly water endangering
VWWWS A4

Other regulations: The product is classified and labelled in accordance with EC directives or respective national laws.
Regional or national implementations of GHS may not implement all hazard classes and categories.
: Classification / Labeling according to Directive 2008/47/EU.

15.2 Chemical Safety Assessment

For a mixture it is not mandatory to include an exposure scenario in the material safety data sheet.
The necessary safety - related information is stated in the first 16 sections.

SECTION 16: Other information

Full text of R-phrases referred to under sections 2 and 3

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R10	Flammable.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

Full text of H-Statements referred to under sections 2 and 3.

EUH066	Repeated exposure may cause skin dryness or cracking.
H223	Flammable aerosol.
H226	Flammable liquid and vapour.
H229	Pressurized container: May burst if heated.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.

Full text of Notas referred to under section 3

Nota H	The classification and label shown for this substance applies to the dangerous property(ies) indicated by the risk phrase(s) in combination with the category(ies) of danger shown. The manufacturers, importers and downstream users of this substance shall be obliged to carry out an investigation to make themselves aware of the relevant and accessible data which exists for all other properties to classify and label the substance. The final label shall follow the requirements of section 7 of Annex VI of this Directive.
Nota P	The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (Einecs No 200-753-7). When the substance is classified as a carcinogen or mutagen, Note E shall also apply. When the substance is not classified as a carcinogen or mutagen at least the S-phrases (2-)23-24-62 shall apply. This note applies only to certain complex oil-derived substances in Annex I.

Further information

The information provided is based on our current knowledge and experience and apply to the product as delivered. Regarding the product properties, these are not guaranteed. The delivery of this safety datasheet does not free the recipient of the product from his own responsibility to follow the relevant rules and regulations concerning this product.