

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

# Chemetall

## Ardrox 3966

Version: 4.0

Revision Date 21.05.2013

Print Date 04.09.2013

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

#### 1.1 Product identifier

Trade name : Ardrox 3966

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

Use of the Sub- : Corrosion inhibitor  
stance/Mixture

Recommended restrictions : None known.  
on use

#### 1.3 Details of the supplier of the safety data sheet

Company : Chemetall Ltd  
Denbigh Road  
Bletchley Milton Keynes MK1 1PB  
Telephone : 01908 649333  
Telefax : 01908 373939

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

#### 1.4 Emergency telephone number

Emergency telephone : 01908 649333  
number

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3 H226: Flammable liquid and vapour.  
Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-  
ways.

Specific target organ toxicity - single ex- H336: May cause drowsiness or dizziness.  
posure, Category 3, Central nervous  
system

Acute toxicity, Category 4 H302: Harmful if swallowed.  
Acute toxicity, Category 4 H332: Harmful if inhaled.

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

Flammable R10: Flammable.  
Harmful R65: Harmful: may cause lung damage if swal-  
lowed.

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R20/22: Harmful by inhalation and if swallowed.  
R66: Repeated exposure may cause skin dryness or cracking.

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms



Signal word

: Danger

Hazard statements

: H226 Flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H302 Harmful if swallowed.  
H332 Harmful if inhaled.  
H336 May cause drowsiness or dizziness.

: EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements

: **Prevention:**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P262 Do not get in eyes, on skin, or on clothing.  
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.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P308 IF exposed or concerned:  
P310 Immediately call a POISON CENTER or doctor/ physician.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

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- Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics
- 61790-48-5 Bariumsulfonate

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

Hazard pictograms :



Harmful

R-phrases)

: R10  
R20/22  
R65  
R66

Flammable.  
Harmful by inhalation and if swallowed.  
Harmful: may cause lung damage if swallowed.  
Repeated exposure may cause skin dryness or cracking.

S-phrases)

: S23  
S24/25  
S36/37/39  
S60  
S62

Do not breathe gas/fumes/vapour/spray.  
Avoid contact with skin and eyes.  
Wear suitable protective clothing, gloves and eye/face protection.  
This material and its container must be disposed of as hazardous waste.  
If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Hazardous components which must be listed on the label:

- Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics
- 61790-48-5 Bariumsulfonate

**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**

Chemical nature : Mixture of organic solvents.

**Hazardous components**

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
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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	>= 50 - < 65
Bariumsulfonate	61790-48-5 263-140-3	Xn; R20/22  Nota A	Acute Tox. 4; H302  Acute Tox. 4; H332	>= 2.5 - < 10
2-Butoxyethanol	111-76-2 203-905-0 01-2119475108-36	Xn; R20/21/22  Xi; R36/38	Acute Tox. 4; H332  Acute Tox. 4; H312  Acute Tox. 4; H302  Eye Irrit. 2; H319  Skin Irrit. 2; H315	>= 1 - < 2.5

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.

**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.

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- 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 : May cause drowsiness or dizziness.
- Risks : Aspiration hazard.

**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<sub>2</sub>)  
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-fighting : May form toxic gases on heating or in case of fire.  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)

**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.

**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions : Ensure adequate ventilation.

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Remove all sources of ignition.

**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.  
Have eye wash bottle or eye rinse ready at the work place.

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

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Keep containers tightly closed in a cool, well-ventilated place.  
Store in a place accessible by authorized persons only.  
Keep away from heat.

Storage period : 36 month

Storage temperature : -10 - 40 °C

**7.3 Specific end uses**

Specific use(s) : Corrosion inhibitor

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

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Components	CAS-No.	Value	Control parameters	Update	Basis
2-Butoxyethanol	111-76-2	TWA	20 ppm 98 mg/m <sup>3</sup>	2000-06-16	2000/39/EC
Further information	: skin: Identifies the possibility of significant uptake through the skin Indicative				
	111-76-2	STEL	50 ppm 246 mg/m <sup>3</sup>	2000-06-16	2000/39/EC
Further information	: skin: Identifies the possibility of significant uptake through the skin Indicative				
	111-76-2	TWA	25 ppm	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.				
	111-76-2	STEL	50 ppm	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.				

**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/m<sup>3</sup>

**8.2 Exposure controls**

**Engineering measures**

Ensure adequate ventilation, especially in confined areas.  
Electrical equipment should be protected to the appropriate standard.  
Keep only in the original container.

**Personal protective equipment**

Respiratory protection : In case of insufficient ventilation wear suitable respiratory

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- equipment.  
Recommended Filter type:  
A-P2
- Hand protection : Nitrile rubber  
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.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

- Appearance : liquid
- Colour : amber
- Odour : hydrocarbon-like
- Flash point : 40 - 45 °C
- pH : not applicable
- Boiling point/boiling range : > 150 °C
- Density : 0.83 g/cm<sup>3</sup>



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at 20 °C

Water solubility : insoluble

Viscosity, kinematic : < 7 mm<sup>2</sup>/S  
at 40 °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: 492 g/l

**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 : None known.

**10.4 Conditions to avoid**

Conditions to avoid : Keep away from open flames, hot surfaces and sources of ignition.

**10.5 Incompatible materials**

Materials to avoid : Strong oxidizing agents

**10.6 Hazardous decomposition products**

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

**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

**Acute toxicity**

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### Acute oral toxicity

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

### Bariumsulfonate

2-Butoxyethanol :  
LD50: 1,746 mg/kg  
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

### 2-Butoxyethanol

: LD50: > 2,000 mg/kg  
Species: guinea pig  
Method: OECD Test Guideline 402

### 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.

### 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.

### Aspiration hazard

Aspiration toxicity : May be fatal if swallowed and enters airways.

Neurological effects : May cause drowsiness or dizziness.

### Toxicology Assessment

Acute effects : Harmful if swallowed or if inhaled

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

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### 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

2-Butoxyethanol : LC50: 1,490 mg/l  
Exposure time: 96 h  
Species: Lepomis macrochirus (Bluegill sunfish)

##### 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

2-Butoxyethanol : EC50: 1,720 mg/l  
Exposure time: 24 h  
Species: Daphnia

##### Toxicity to algae

2-Butoxyethanol : Cell multiplication inhibition test EC0: 900 mg/l  
Exposure time: 168 h  
Species: Scenedesmus quadricauda (Green algae)

##### Toxicity to bacteria

2-Butoxyethanol : EC0: 700 mg/l  
Exposure time: 16 h  
Species: Pseudomonas putida

#### 12.2 Persistence and degradability

Biodegradability : no data available

Biodegradability : 100 %  
2-Butoxyethanol : Testing period: 28 d  
Readily biodegradable

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Zahn-Wellens Test; EG 88/302

**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.  
Do not allow material to contaminate ground water system.

**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 discussion with the waste disposal authorities.

**SECTION 14: Transport information**

**ADR**

UN number : 1993  
UN proper shipping name : FLAMMABLE LIQUID, N.O.S., Naphtha (petroleum), hydrotreated heavy; Low boiling point thermally cracked naphtha  
Transport hazard class(es) : 3  
Packing group : III  
Classification Code : F1  
Hazard identification No : 30  
Packing instruction (LQ) : LQ7  
Limited Quantity (LQ) Inner : 5.00 L  
Packaging  
Labels : 3  
Tunnel restriction code : (D/E)

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Environmentally hazardous : no

### IATA

UN number : 1993  
Description of the goods : FLAMMABLE LIQUID, N.O.S., Naphtha (petroleum), hydrotreated heavy; Low boiling point thermally cracked naphtha  
Class : 3  
Packing group : III  
Labels : 3

### IATA\_C

Packing instruction (cargo aircraft) : 366  
Environmentally hazardous : no

### IATA\_P

Packing instruction (passenger aircraft) : 355  
Environmentally hazardous : no

### IMDG

UN number : 1993  
Description of the goods : FLAMMABLE LIQUID, N.O.S., Naphtha (petroleum), hydrotreated heavy; Low boiling point thermally cracked naphtha  
Class : 3  
Packing group : III  
Labels : 3  
EmS Number 1 : F-E  
EmS Number 2 : S-E  
Marine pollutant : no

### RID

UN number : 1993  
Description of the goods : FLAMMABLE LIQUID, N.O.S., Naphtha (petroleum), hydrotreated heavy; Low boiling point thermally cracked naphtha  
Transport hazard class(es) : 3  
Packing group : III  
Classification Code : F1  
Hazard identification No : 33  
Labels : 3  
Packing instruction (LQ) : LQ7  
Environmentally hazardous : no

## SECTION 15: Regulatory information

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

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

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Water contaminating class (Germany) : WGK 1 slightly water endangering  
VWVWS 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.

### 15.2 Chemical Safety Assessment

For the lead substance(s) in the mixture, there is no exposure scenario available.  
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

R10	Flammable.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R20/22	Harmful by inhalation and if swallowed.
R36/38	Irritating to eyes and skin.
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.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.

### Full text of Notas referred to under section 3

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- Nota A** The name of the substance must appear on the label in the form of one of the designations given in Annex I (see Article 23(2)(a)). In Annex I, use is sometimes made of a general description such as compounds or salt. In this case, the manufacturer or any other person who markets such a substance is required to state on the label the correct name, due account being taken of the chapter entitled Nomenclature of the Foreword: Example: for BeCl<sub>2</sub> (Einecs No 232-116-4): beryllium chloride. The Directive also requires that the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in Annex I (Article 23(2)(c), (d) and (e)). For substances belonging to one particular group of substances included in Annex I, the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in the appropriate entry in Annex I. For substances belonging to more than one group of substances included in Annex I, the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in both the appropriate entries given in Annex I. In cases where two different classifications are given in the two entries for the same hazard, the classification reflecting the more severe hazard classification is used. Example: for substance AB - no individual entry in Annex I: Annex I group entry for compounds of A: Repr. Cat. 1; R61 Repr. Cat. 3; R62 Xn; R20/22 R33 N; R50-53 Annex I group entry for compounds of B: Carc. Cat.1; R45 T; R23/25 N; R51-53 Classification of substance AB thus becomes: Carc. Cat. 1; R45 Repr. Cat. 1; R61 Repr. Cat. 3; R62 T; R23/25 R33 N; R50-53.
- 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.