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

1.1 Product identifier

Trade name : Ardrox 6333 A

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

Use of the Substance/Mixture : Cleaning agent for metal surfaces.

Recommended restrictions on use : For professional users only.

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)6971653581
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)

Skin corrosion, Category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H361d Suspected of damaging the unborn child.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P260 Do not breathe vapours, aerosols.
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 IF exposed or concerned:
P310 Immediately call a POISON CENTER/doctor.

Disposal:

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

Hazardous components which must be listed on the label:
Dipotassium tetraborate

Potassium Hydroxide

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Aqueous solution of alkali salts and surfactants.

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (% w/w)
Dipotassium tetraborate	1332-77-0 215-575-5 01-2119970730-37-0001, 01-2119970730-37-0002, 01-2119970730-37-0003, 01-	Repr. 2; H361d	>= 5.2 - < 10

	2119970730-37-0004		
Potassium Hydroxide	1310-58-3 215-181-3 01-2119487136-33	Met. Corr. 1; H290 Acute Tox. 4; H302 Skin Corr. 1A; H314	>= 2.5 - < 5
Potassium silicate, MR <= 1.6	1312-76-1 215-199-1 01-2119456888-17	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 1 - < 2.5
aliphatic alcohols, alkoxylated	438476-83-6	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - < 2.5
Alcohols, C8-10, ethoxylated propoxylated	68603-25-8	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 1 - < 2.5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : First Aid responders should pay attention to self-protection and use the recommended protective clothing
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.
Call a physician immediately.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids.
Call a physician immediately.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : Causes severe skin burns and eye damage.
Suspected of damaging the unborn child.
If swallowed, severe burns in the oral cavity and throat as well as danger of perforation of the digestive tract and stomach.
Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.

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 (CO2) 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 (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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Ensure adequate ventilation. Wear personal protective equipment.

6.2 Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. Inform the relevant authorities if it enters sewers, aquatic environment or soil.

6.3 Methods and material 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

For further information see Section 8 of the safety data sheet.
For disposal considerations see section 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. To avoid risks to man and the environment, comply with the instructions for use.
Advice on protection against fire and explosion	:	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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 vapours, aerosols.

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. To maintain product quality, do not store in heat or direct sunlight. Protect from frost. Store in original container.
Storage period	:	36 month
Recommended storage temperature	:	10 - 30 °C

7.3 Specific end use(s)

Specific use(s)	:	Cleaning agent for metal surfaces.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Potassium Hydroxide	1310-58-3	STEL	2 mg/m3	GB EH40

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Dipotassium tetraborate	Workers	Inhalation	Long-term systemic effects	7.8 mg/m3
	Workers	Inhalation	Long-term local effects	13.6 mg/m3
	Workers	Inhalation	Acute systemic effects	7.8 mg/m3
	Workers	Inhalation	Acute local effects	13.6 mg/m3
	Workers	Skin contact	Long-term systemic effects	367.7 mg/kg bw/day
Potassium Hydroxide	Workers	Inhalation	Long-term local ef-	1 mg/m3

			fects	

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

Substance name	Environmental Compartment	Value
Dipotassium tetraborate	Fresh water	2.02 mg/l
	Marine water	2.02 mg/l
	Sewage treatment plant	10 mg/l

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye protection : Eye protection (EN 166)
Tightly fitting safety goggles
Have eye wash bottle or eye rinse ready at the work place.

Hand protection
Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.6 mm

Remarks : Protective gloves complying with EN 374. The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection : Chemical resistant protective clothing according to DIN EN 13034 (Type 6)

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
Recommended Filter type:

Filter type : Combined inorganic gas/vapour and organic vapour type (AB)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : amber

Odour : like soap

Odour Threshold : No data available

pH : 13.6 (20 °C)
(undiluted)

Solidification temperature/range : ca. 0 °C

Boiling point/boiling range	:	ca. 100 °C
Flash point	:	Not applicable Other information: Does not sustain combustion.
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.14 g/cm³ (20 °C)
Solubility(ies) Water solubility	:	completely soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, dynamic	:	ca. 2 mPa*s
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Explosive properties	:	no explosion risk
Oxidizing properties	:	No data available

9.2 Other information

Other physico-chemical properties: This information is not available/not determined.

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 : Exothermic reaction with strong acids.

10.4 Conditions to avoid

Conditions to avoid : Protect from frost, heat and sunlight.

10.5 Incompatible materials

Materials to avoid : Strong acids
Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

Acute toxicity

Components:

Dipotassium tetraborate:

Acute oral toxicity : LD50 (Rat): 3,690 mg/kg

Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute dermal toxicity : Remarks: Based on available data, the classification criteria are not met.

Potassium Hydroxide:

Acute oral toxicity : LD50 (Rat): 365 mg/kg

Alcohols, C8-10, ethoxylated propoxylated:

Acute oral toxicity : (Rat, female): 616 mg/kg

Acute dermal toxicity : LD50 (Rabbit, female): 5,660 mg/kg

Skin corrosion/irritation

Product:
Remarks: Causes severe burns.

Serious eye damage/eye irritation

Product:
Remarks: Causes serious eye damage.

Respiratory or skin sensitisation

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

Germ cell mutagenicity

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

Germ cell mutagenicity

Components:

Dipotassium tetraborate:

Genotoxicity in vitro : Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative
Test substance: Read-across (Analogy)

: Test Type: In vitro Mammalian Cell Gene Mutation Test
Method: OECD Test Guideline 476
Result: negative
Test substance: Read-across (Analogy)

: Test Type: Chromosome aberration test in vitro
Result: negative
Test substance: Read-across (Analogy)

Genotoxicity in vivo : Species: Mouse (male and female)
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative
Test substance: Read-across (Analogy)

Carcinogenicity

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

Carcinogenicity

Components:

Dipotassium tetraborate:

Carcinogenicity - Assessment	:	Based on available data, the classification criteria are not met.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	:	Suspected of damaging the unborn child.

Reproductive toxicity

Components:

Dipotassium tetraborate:

Effects on fertility	:	Species: Rat Application Route: Oral Fertility: NOAEL Parent: 94.6 mg/kg bw/d Symptoms: Effects on fertility Species: Rat Application Route: Oral NOAEL: 94.6 mg/kg, Test substance: Read-across (Analogy) Remarks: Fertility
Effects on foetal development	:	Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 72 mg/kg bw/d Developmental Toxicity: NOAEL F1: 52 mg/kg bw/d Method: OECD Test Guideline 414 Species: Rat Application Route: Oral 52 mg/kg 72 mg/kg Method: OECD Test Guideline 414 Test substance: Read-across (Analogy)

STOT - single exposure

Product:

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

STOT - repeated exposure

Product:

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

Aspiration toxicity

Product:

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

Further information

Product:

Remarks: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology studies for the product are not available.

Components:

Dipotassium tetraborate:

Toxicity to fish	:	LC50 (Fish): 400 - 3,919 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	243 - 7,438 mg/l
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (algae)): 216 mg/l
Toxicity to microorganisms	:	NOEC : 10 mg/l

Potassium Hydroxide:

Toxicity to fish	:	LC50 (Fish): 28.6 mg/l Exposure time: 24 h Method: OECD Test Guideline 203 LC50 (Gambusia affinis (Mosquito fish)): 80 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia (water flea)): > 100 mg/l Method: OECD Test Guideline 202

Alcohols, C8-10, ethoxylated propoxylated:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 13.3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 12.3 mg/l Exposure time: 48 h Test Type: Immobilization
Toxicity to microorganisms	:	IC50 (Bacteria): 220 - 770 mg/l Exposure time: 16 h

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: The surfactant(s) contained in this mixture complies(comply) with the biodegradability criteria as laid down in

Regulation (EC) No.907/2006 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

Components:

Alcohols, C8-10, ethoxylated propoxylated:

Biodegradability : Biodegradation: > 70 %
Exposure time: 28 d
Method: OECD Test Guideline 302B
Remarks: Readily biodegradable

Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Readily biodegradable
This surfactant complies with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Components:

Dipotassium tetraborate:

Bioaccumulation : Test substance: Read-across (Analogy)
Remarks: Does not bioaccumulate.

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: No data available

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..

12.6 Other adverse effects

Product:

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	:	In accordance with local and national 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

14.1 UN number

ADR	:	UN 1719
RID	:	UN 1719
IMDG	:	UN 1719
IATA	:	UN 1719

14.2 UN proper shipping name

ADR	:	CAUSTIC ALKALI LIQUID, N.O.S. (Potassium Hydroxide, Potassium silicate)
RID	:	CAUSTIC ALKALI LIQUID, N.O.S. (Potassium Hydroxide, Potassium silicate)
IMDG	:	CAUSTIC ALKALI LIQUID, N.O.S. (Potassium Hydroxide, Potassium silicate)
IATA	:	Caustic alkali liquid, n.o.s. (Potassium Hydroxide, Potassium silicate)

14.3 Transport hazard class(es)

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

14.4 Packing group

ADR

Packing group	:	III
Classification Code	:	C5
Hazard Identification Number	:	80
Labels	:	8

Tunnel restriction code	:	(E)

RID

Packing group	:	III
Classification Code	:	C5
Hazard Identification Number	:	80
Labels	:	8

IMDG

Packing group	:	III
Labels	:	8
EmS Code	:	F-A, S-B
Remarks	:	Alkalis, Stow "away from" ammonium salts, Stow "separated from" acids.

IATA (Cargo)

Packing instruction (cargo aircraft)	:	856
Packing instruction (LQ)	:	Y841
Packing group	:	III
Labels	:	Corrosives

IATA (Passenger)

Packing instruction (passenger aircraft)	:	852
Packing instruction (LQ)	:	Y841
Packing group	:	III
Labels	:	Corrosives

14.5 Environmental hazards

ADR

Environmentally hazardous	:	no

RID

Environmentally hazardous	:	no

IMDG

Marine pollutant	:	no

14.6 Special precautions for user

Refer to protective measures listed in sections 7 and 8.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Volatile organic compounds	:	Directive 1999/13/EC on the limitation of emissions of volatile organic compounds Volatile organic compounds (VOC) content: 0.7 g/l
according to Detergents Regulation EC 648/2004	:	less than 5 %: Non-ionic surfactants
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 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 H-Statements

H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H361d	:	Suspected of damaging the unborn child.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Met. Corr.	:	Corrosive to metals
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentra-

tion; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other 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.

GB / EN