



Safety Data Sheet according to (EC) No 1907/2006 as amended

Page 1 of 12

BONDERITE C-IC 146 ACID CLEANER

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

1.1. Product identifier

BONDERITE C-IC 146 ACID CLEANER

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

Intended use:

Etching Agents for Metals

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
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40589 Düsseldorf

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For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.com.

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Corrosive to metals

Category 1

H290 May be corrosive to metals.

|| Skin corrosion

Category 1B

|| H314 Causes severe skin burns and eye damage.

Serious eye damage

Category 1

H318 Causes serious eye damage.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

Phosphoric acid

Signal word:	Danger
Hazard statement:	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.
Precautionary statement:	P260 Do not breathe mist/spray.
Prevention	P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement:	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
Response	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor.

2.3. Other hazards

None if used properly.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Phosphoric acid 7664-38-2 231-633-2 01-2119485924-24	60- < 75 %	Met. Corr. 1, H290 Skin Corr. 1B, H314 Acute Tox. 4, Oral, H302	Skin Corr. 1B; H314; C \geq 25 % Eye Irrit. 2; H319; C 10 - < 25 % Skin Irrit. 2; H315; C 10 - < 25 % ===== oral:ATE = 1.500 mg/kg	EU OEL

For full text of the H - statements and other abbreviations see section 16 "Other information".

Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to Detergent Regulation 648/2004/EC

> 30 % phosphates

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Skin contact:

Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing.

Seek medical attention from a specialist.

Eye contact:

Immediately flush eyes with soft jet of water or eye rinse solution for at least 15 minutes. Hold eyelid wide-open. Seek a doctor/hospital, eye flushing should continue during transportation to a doctor.

Ingestion:

Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Immediate medical treatment necessary.

4.2. Most important symptoms and effects, both acute and delayed

Causes burns.

4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media:**

All common extinguishing agents are suitable.

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.
Wear protective equipment.

Additional information:

In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin and eyes.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Neutralize with acid-binding material (e.g. powdered limestone).
Take up with liquid-absorbing material (sand).
Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

When diluting, always stir slowly the product into standing water.
Avoid skin and eye contact.
Ensure that workrooms are adequately ventilated.
See advice in section 8

Hygiene measures:

Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Wash contaminated clothing before reuse.
The workplace should be equipped with an emergency shower and eye-rinsing facility.

7.2. Conditions for safe storage, including any incompatibilities

Store according to water endangerment category (see national regulations section)

Keep container tightly sealed.

Keep only in original container.

7.3. Specific end use(s)

Etching Agents for Metals

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational Exposure Limits**Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Orthophosphoric acid 7664-38-2 [ORTHOPHOSPHORIC ACID]		2	Short Term Exposure Limit (STEL):	Indicative	ECLTV
Orthophosphoric acid 7664-38-2 [ORTHOPHOSPHORIC ACID]		1	Time Weighted Average (TWA):	Indicative	ECLTV
Orthophosphoric acid 7664-38-2			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
Orthophosphoric acid 7664-38-2		2	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
phosphoric acid 7664-38-2	sediment (freshwater)						no hazard identified
phosphoric acid 7664-38-2	sediment (marine water)						no hazard identified
phosphoric acid 7664-38-2	Air						no hazard identified
phosphoric acid 7664-38-2	Soil						no hazard identified
phosphoric acid 7664-38-2	Predator						no potential for bioaccumulation

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
phosphoric acid 7664-38-2	Workers	inhalation	Long term exposure - systemic effects		10,7 mg/m ³	no hazard identified
phosphoric acid 7664-38-2	General population	inhalation	Long term exposure - systemic effects		4,57 mg/m ³	no hazard identified
phosphoric acid 7664-38-2	General population	inhalation	Long term exposure - local effects		0,36 mg/m ³	no hazard identified
phosphoric acid 7664-38-2	General population	oral	Long term exposure - systemic effects		0,1 mg/kg	no hazard identified
phosphoric acid 7664-38-2	Workers	inhalation	Long term exposure - local effects		1 mg/m ³	no hazard identified
phosphoric acid 7664-38-2	Workers	inhalation	Acute/short term exposure - local effects		2 mg/m ³	no hazard identified

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

Hand protection:

Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Polychloroprene (CR; ≥ 1 mm thickness) or natural rubber (NR; ≥ 1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; ≥ 1 mm thickness) or natural rubber (NR; ≥ 1 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Goggles which can be tightly sealed.

Protective eye equipment should conform to EN166.

Skin protection:

Protective clothing that covers arms and legs.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state

liquid

Delivery form	liquid
Colour	yellow, up to, brownish
Odor	no valuation
Melting point	Not applicable, Product is a liquid
Initial boiling point	> 100 °C (> 212 °F)None Aqueous solution
Flammability	Not applicable Aqueous solution
Explosive limits	Not applicable, Aqueous solution
Flash point	> 100 °C (> 212 °F)
Auto-ignition temperature	Not applicable, Aqueous solution
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH (20 °C (68 °F); Conc.: 1 % product; Solvent: Demineralised water)	1,3 - 1,9 PH-value, potentiometer
Viscosity (kinematic) (40 °C (104 °F);)	0,8 - 5 mm ² /s
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	fully miscible
Partition coefficient: n-octanol/water	Not applicable Mixture
Vapour pressure (20 °C (68 °F))	23 hPa Values referring to water
Vapour pressure (50 °C (122 °F))	124 hPa Values referring to water
Density (20 °C (68 °F))	1,550 - 1,590 g/cm ³ Density, oscillation
Relative vapour density: (20 °C)	< 1
Particle characteristics	Not applicable Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with strong bases

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

None if used for intended purpose.

In case of fire toxic gases can be released.

SECTION 11: Toxicological information

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

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Phosphoric acid 7664-38-2	Acute toxicity estimate (ATE)	1.500 mg/kg		Expert judgement

Acute dermal toxicity:

No data available.

Acute inhalative toxicity:

No data available.

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Phosphoric acid 7664-38-2	corrosive	24 h	rabbit	not specified

Serious eye damage/irritation:

No data available.

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Phosphoric acid 7664-38-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Phosphoric acid 7664-38-2	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Phosphoric acid 7664-38-2	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

Carcinogenicity

No data available.

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Phosphoric acid 7664-38-2	NOAEL P 500 mg/kg NOAEL F1 500 mg/kg	one- generation study	oral: gavage	rat	OECD Combined Repeated Dose and Reproductive / Developmental Toxicity Screening Test (Precursor Protocol of GL 422)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Phosphoric acid 7664-38-2	NOAEL 250 mg/kg	oral: gavage	6 w daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

Locally harmful for aquatic and landliving organisms because of low pH and corrosive properties.

Do not empty into drains / surface water / ground water.

The biodegradability of the surfactants contained in the product is in accordance with the requirements of the EU Detergent Regulation (EC/648/2004).

The surfactants contained in the products are primary biodegradable to at least 90% on average.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Phosphoric acid 7664-38-2	LC50	> 100 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Phosphoric acid 7664-38-2	EC50	> 100 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

No data available.

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Phosphoric acid 7664-38-2	EC50	> 100 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Phosphoric acid 7664-38-2	NOEC	100 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Phosphoric acid 7664-38-2	IC50	270 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Phosphoric acid 7664-38-2	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

If acidic or alkaline products are discharged into wastewater installations care must be taken that the discharged wastewater has a pH in the range pH 6 - 10, as pH variations could cause disorders in wastewater channels and biological sewage treatment plants. The local discharge regulations take precedence.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

060104

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number or ID number

ADR	1805
RID	1805
ADN	1805
IMDG	1805
IATA	1805

14.2. UN proper shipping name

ADR	PHOSPHORIC ACID SOLUTION
RID	PHOSPHORIC ACID SOLUTION
ADN	PHOSPHORIC ACID SOLUTION
IMDG	PHOSPHORIC ACID SOLUTION
IATA	Phosphoric acid, solution

14.3. Transport hazard class(es)

ADR	8
RID	8
ADN	8
IMDG	8
IATA	8

14.4. Packing group

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (E)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EU)	0 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV))
Classification according to AwSV, Annex 1 (5.2)

Storage class according to TRGS 510: 8B

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2:	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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