

SAFETY DATA SHEET

Zinn 7

1. Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Product name : Zinn 7

Use of the substance/preparation : Other nonspecified industry: Flux for soldering

Company/undertaking identification

Supplier or representative of supplier : Umicore Marketing Services UK
4 Rivers House Fentiman Walk
SG14 1DB Hertford Herts
GB Great Britain
Phone : +44 1992551939

Emergency telephone number : Emergency telephone number IPDS Umicore : +32 2 2277026

2. Composition/information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS number	%	EC Number	Classification
Zinc chloride	7646-85-7	>25	231-592-0	C; R34 N; R50/53
Ethanediol	107-21-1	<25	203-473-3	Xn; R22
Ammonium chloride	12125-02-9	<20	235-186-4	Xn; R22 Xi; R36
propan-2-ol	67-63-0	<15	200-661-7	F; R11 Xi; R36 R67
Hydrochloric acid	7647-01-0	<10	231-595-7	C; R34 Xi; R37
See section 16 for the full text of the R Phrases declared above				

* Occupational Exposure Limit(s), if available, are listed in Section 8

3. Hazards identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xn; R22
C; R34
N; R50/53

Human health hazards : Harmful if swallowed.
Causes burns.

Environmental hazards : Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

See section 11 for more detailed information on health effects and symptoms.

4. First aid measures

Symptoms

- Inhalation** : Corrosive to the respiratory system.
- Ingestion** : Harmful if swallowed.
- Skin Contact** : Corrosive to the skin.
- Eye contact** : Corrosive to eyes.

First aid measures

- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention immediately.
- Ingestion** : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
- Skin Contact** : In case of contact, immediately flush skin copiously with water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Obtain medical attention immediately.
- Eye contact** : In case of contact, immediately flush eyes with a copious amount of water for at least 15 minutes. Obtain medical attention immediately.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Extinguishing media : Use an extinguishing agent suitable for surrounding fires.

Special exposure hazards : No specific hazard.

This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

See section 11 for more detailed information on health effects and symptoms.

Hazardous thermal decomposition products : These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...), halogenated compounds, hydrogen chloride. Some metallic oxides.

Special protective equipment for fire-fighters : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal Precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Note: see section 8 for personal protective equipment and section 13 for waste disposal.

7. Handling and storage

Handling : Do not ingest. Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Do not breathe vapour or mist. Avoid contact of spilled material and runoff with soil and surface waterways. Avoid exposure. Use suitable protective equipment (Section 8). Avoid generation of dust.

Storage : Keep container tightly closed. Keep container in a well-ventilated area.
Packaging materials

Recommended : Use original container.

8. Exposure controls/personal protection

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Zinc chloride	EH40-OES (United Kingdom (UK), 1/2003). STEL: 2 mg/m ³ 15 minute(s). Form: Fume TWA: 1 mg/m ³ 8 hour(s). Form: Fume
Ethanediol	EH40-OES (United Kingdom (UK), 2002). Skin Notes: STEL: 104 mg/m ³ 15 minute(s). Form: Vapour TWA: 10 mg/m ³ 8 hour(s). Form: Particulate TWA: 52 mg/m ³ 8 hour(s). Form: Vapour
Ammonium chloride	EH40-OES (United Kingdom (UK), 5/2003). STEL: 20 mg/m ³ 15 minute(s). Form: Fume TWA: 10 mg/m ³ 8 hour(s). Form: Fume
propan-2-ol	EH40-OES (United Kingdom (UK), 5/2003). STEL: 1250 mg/m ³ 15 minute(s). Form: All forms STEL: 500 ppm 15 minute(s). Form: All forms TWA: 999 mg/m ³ 8 hour(s). Form: All forms TWA: 400 ppm 8 hour(s). Form: All forms
Hydrochloric acid	EH40-OES (United Kingdom (UK), 5/2003). STEL: 8 mg/m ³ 15 minute(s). Form: All forms STEL: 5 ppm 15 minute(s). Form: All forms TWA: 2 mg/m ³ 8 hour(s). Form: All forms TWA: 1 ppm 8 hour(s). Form: All forms

Exposure controls

- Occupational exposure controls** : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Skin protection / Hand protection** : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Hygiene measures

- General information** : Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.

9. Physical and chemical properties

General information

Appearance

- Physical state** : Liquid.
- Colour** : Colourless.
- Odour** : Characteristic.

Important health, safety and environmental information

- pH** : 1.2 [Acidic.]
- Boiling point** : 100°C (212°F)
- Flash point** : The lowest known value is Open cup: 11.85°C (53.3°F). (propan-2-ol)

Explosive properties	: Not available.
Oxidising properties	: Not available.
Vapor pressure	: 2.2661 kPa (17 mm Hg) (at 20°C)
Relative density	: 1.3 (Water = 1)
Solubility	: Easily soluble in cold water.
Vapor density	: The highest known value is 2.14 (Air = 1) (Ethanediol). Weighted average: 2.11 (Air = 1)
Evaporation rate (butyl acetate = 1)	: The highest known value is 1.7 (propan-2-ol) Weighted average: 0.64 compared to Butyl acetate.
Other information	
Auto-ignition temperature	: 410°C (770°F)

10. Stability and reactivity

Stability	: The product is stable.
Hazardous Decomposition Products	: These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...), halogenated compounds, hydrogen chloride. Some metallic oxides.

11. Toxicological information

Potential acute health effects

Inhalation	: Corrosive to the respiratory system.
Ingestion	: Harmful if swallowed.
Skin Contact	: Corrosive to the skin.
Eye contact	: Corrosive to eyes.

Acute toxicity

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Zinc chloride	LD50	350 mg/kg	Oral	Rat
	LD50	200 mg/kg	Oral	Guinea pig
	LD50	329 mg/kg	Oral	Mouse
Ethanediol	LD50	4700 mg/kg	Oral	Rat
	LD50	1650 mg/kg	Oral	Cat
	LD50	5500 mg/kg	Oral	Mouse
	LDLo	398 mg/kg	Oral	human
	LDLo	786 mg/kg	Oral	human
	LD50	1650 mg/kg	Oral	Rat
Ammonium chloride	LD50	1300 mg/kg	Oral	Mouse
	LDLo	600 mg/kg	Oral	Dog
	LDLo	1500 mg/kg	Oral	Domestic Animals.
	LD50	5045 mg/kg	Oral	Rat
propan-2-ol	LD50	6410 mg/kg	Oral	Rabbit
	LD50	3600 mg/kg	Oral	Mouse
	LD50	12800 mg/kg	Dermal	Rabbit
	LDLo	1537 mg/kg	Oral	Dog
	LDLo	3570 mg/kg	Oral	human
	LDLo	5272 mg/kg	Oral	man

Potential chronic health effects

Carcinogenicity	: No known significant effects or critical hazards. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Ethanediol]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [propan-2-ol]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Hydrochloric acid].
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: No known significant effects or critical hazards.

12. Ecological information

Ecotoxicity data

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Zinc chloride	Daphnia magna (EC50)	48 hour(s)	2.8 mg/l
	Daphnia magna (EC50)	48 hour(s)	93.8 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.066 mg/l
	Daphnia magna (LC50)	96 hour(s)	0.06791 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.093 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.095 mg/l
Ethanediol	Pimephales promelas (LC50)	96 hour(s)	8050 mg/l
	Pimephales promelas (LC50)	96 hour(s)	>10000 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	27540 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	41000 mg/l
	Pimephales promelas (LC50)	96 hour(s)	49000 mg/l
	Pimephales promelas (LC50)	96 hour(s)	53000 mg/l
Ammonium chloride	Oncorhynchus mykiss (LC50)	96 hour(s)	0.08 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.11 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.16 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.21 mg/l
	Pimephales promelas (LC50)	96 hour(s)	0.25 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.25 mg/l
propan-2-ol	Pimephales promelas (EC50)	48 hour(s)	10000 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	>1400 mg/l
	Pimephales promelas (LC50)	96 hour(s)	6550 mg/l
	Pimephales promelas (LC50)	96 hour(s)	9640 mg/l
	Pimephales promelas (LC50)	96 hour(s)	10400 mg/l
	Pimephales promelas (LC50)	96 hour(s)	11130 mg/l

Other adverse effects : Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

13. Disposal considerations





Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

European waste catalogue (EWC) : Not available.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional Information
ADR/RID Classification	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride)	8	III		Hazard identification number 80 Limited quantity LQ19 CEPIC Tremcard 80GC1-II+III
ADN Classification	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride)	8	III		-
IMO/IMDG Classification	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride)	8	III		Emergency schedules (EmS) F-A, S-B
IATA Class	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride)	8	III		Quantity limitation - Passenger Aircraft - Limited quantity 1 L Quantity limitation - Passenger Aircraft 5 L Quantity limitation - Cargo Aircraft 60 L

15. Regulatory information

EU Regulations

Hazard symbol(s) :



Corrosive, Dangerous for the environment.

Risk Phrases :

R22- Harmful if swallowed.

R34- Causes burns.

R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases :

S7/8- Keep container tightly closed and dry.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S57- Use appropriate containment to avoid environmental contamination.

S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains :

Zinc chloride

231-592-0

Product use :

Classification and labelling have been performed according to EU directives 67/548/EEC, 1999/45/EC, including amendments and the intended use.

- Industrial applications.

Conforms to 91/155/EEC - 2001/58/EC - United Kingdom (UK)

16. Other information

Full text of R phrases referred to in sections 2 and 3 - United Kingdom (UK) : R11- Highly flammable.
R22- Harmful if swallowed.
R34- Causes burns.
R36- Irritating to eyes.
R37- Irritating to respiratory system.
R67- Vapours may cause drowsiness and dizziness.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK) : F - Highly flammable
C - Corrosive
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment.

History

Date of issue : 7/10/2005.
Date of previous issue : No Previous Validation.
Version : 1

▣ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained in this Material Safety Data Sheet is accurate and reliable on presently available resources. However, neither the seller nor any of its subsidiaries assumes any responsibility or liability whatsoever for the accuracy or completeness of the information contained herein.

This Material Safety Data Sheet shall not constitute a guarantee for any specific product features. Final determination of suitability of this material is the sole responsibility of the user.

All materials may present unknown hazards and should be used and handled with caution and following reasonable safety procedures. Consequently the buyer assumes all risks in connection with the use and handling of this material.

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