



SAFETY DATA SHEET

1. Identification

Product Identifier Worthington Water Soluble Soldering Flux

Other means of identification

SDS number WC015

Recommended use Soldering flux.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation

Address 200 Old Wilson Bridge Road
Columbus, OH 43085
United States

Email: cylinders@worthingtonIndustries.com

Telephone Number: 866-928-2657

CHEMTREC - 24 HOURS:

Within US and Canada 800-424-9300

Outside US and Canada +1 703-741-5970 (collect calls accepted)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 2
Hazardous to the aquatic environment, long-term hazard Category 2

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Collect spillage.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Zinc chloride	7646-85-7	1 - 3

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Unlisted percentages are non-hazardous stabilizers and water. None of the products in this material are listed in NTP, IARC, or OSHA as carcinogens.

4. First-aid measures

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention if discomfort persists.

Skin contact Remove and isolate contaminated clothing and shoes. Immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately. Wash clothing separately before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Causes eye burns. Causes skin irritation.

Indication of immediate medical attention and special treatment needed Treat symptomatically. Exposure may aggravate pre-existing respiratory, lung or kidney disorders.

General information Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media None.

Specific hazards arising from the chemical Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters Firefighters should wear full protective clothing including self contained breathing apparatus.

Fire fighting equipment/instructions Move containers from fire area if you can do it without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Will release small amounts of HCL upon decomposition.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Use personal protection as recommended in Section 8 of the SDS. Avoid inhalation of dust and contact with skin and eyes.

Methods and materials for containment and cleaning up Neutralize with soda ash or sodium bicarbonate. Dilute with plenty of water. Dispose of in accordance with EPA regulations.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling Wear appropriate personal protective equipment (See Section 8). Use only with adequate ventilation. Do not breathe fumes and dusts. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities Store in plastic containers in cool area away from heat. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Zinc chloride (CAS 7646-85-7)	PEL	1 mg/m ³	Fume.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m ³	Fume.
	TWA	1 mg/m ³	Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m ³	Fume.
	TWA	1 mg/m ³	Fume.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	Use personal protective equipment as required. Keep working clothes separately.
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear approved safety glasses or goggles.
Skin protection	
Hand protection	Wear protective gloves.
Other	Wear suitable protective clothing.
Respiratory protection	Use a respirator when local exhaust or ventilation is not adequate to keep exposures below the OEL. In a confined space a supplied respirator may be required. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	White paste.
Physical state	Solid.
Form	Paste.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	1
Melting point/freezing point	140 °F (60 °C) / 14 °F (-10 °C)
Initial boiling point and boiling range	219.2 °F (104 °C)
Flash point	Not applicable.
Evaporation rate	0.6 (Butyl acetate = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.

Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.99
Solubility(ies)	
Solubility (water)	Unlimited.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	Not available.
VOC (Weight %)	0 %

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with metals. Excessive heat or cold.
Incompatible materials	Alkalines. Strong oxidizing agents. Reducing agents. Cyanides. Combustible material.
Hazardous decomposition products	Thermal decomposition or combustion may liberate corrosive gases or fumes. Hydrogen chloride gas. Zinc oxide. Zinc chloride. Ammonium fume.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Irritating to respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Causes serious eye irritation. Causes skin irritation.

Information on toxicological effects

Acute toxicity Causes skin irritation. Causes serious eye damage.

Components	Species	Test Results
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Zinc chloride (CAS 7646-85-7)

Acute

Oral

LD50

Mouse

350 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not classified.

Skin sensitization Not classified.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Not classified.
 Specific target organ toxicity - single exposure Not classified.
 Specific target organ toxicity - repeated exposure Not classified.
 Aspiration hazard Not classified.
 Chronic effects Can cause delayed lung injury.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Zinc chloride (CAS 7646-85-7)		
Aquatic		
Crustacea	EC50	American or virginia oyster (Crassostrea virginica) 0.1511 - 0.2782 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss) 0.101 - 0.197 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.
 Bioaccumulative potential Not available.
 Mobility in soil Expected to be slightly to moderately mobile in soil.
 Other adverse effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal considerations

Disposal instructions Dispose waste and residues in accordance with applicable federal, state, and local regulations.
 Local disposal regulations Dispose of in accordance with local regulations.
 Hazardous waste code Not regulated.
 Waste from residues / unused products Dispose in accordance with all applicable regulations.
 Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN3077
 UN proper shipping name Environmentally hazardous substances, solid, n.o.s. (Zinc chloride RQ = 50000 LBS)
 Transport hazard class(es)
 Class 9
 Subsidiary risk -
 Label(s) 9
 Packing group III
 Environmental hazards
 Marine pollutant Yes
 Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
 Special provisions 8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33
 Packaging exceptions 155
 Packaging non bulk 213
 Packaging bulk 240

IATA

UN number UN3077
 UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (Zinc chloride)
 Transport hazard class(es)
 Class 9
 Subsidiary risk -
 Label(s) 9

Packing group III
Environmental hazards Yes
ERG Code 9L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG
UN number UN3077
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc chloride)
Transport hazard class(es)
 Class 9
 Subsidiary risk -
 Label(s) 9
Packing group III
Environmental hazards
 Marine pollutant Yes
EmS F-A, S-F
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
 All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Zinc chloride (CAS 7646-85-7) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc chloride	7646-85-7	1 - 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Zinc chloride (CAS 7646-85-7)

US. New Jersey Worker and Community Right-to-Know Act

Zinc chloride (CAS 7646-85-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Zinc chloride (CAS 7646-85-7)

US. Rhode Island RTK

Zinc chloride (CAS 7646-85-7)

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 28-May-2015

Revision date -

Version # 01

Further Information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 3
Flammability: 0
Physical hazard: 0

NFPA ratings



Disclaimer

All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.