

SAFETY DATA SHEET

1. Identification

Product identifier	ZRC and Galviline Cold Galvanizing Compounds - Aerosol	
Other means of identification		
Product code	10000, 20010	
Recommended use	Corrosion protection of iron and steel.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Supplier/Manufacturer	ZRC Worldwide	
Address	145 Enterprise Drive, Marshfield, MA 02050	
Telephone	781-319-0400	
Emergency telephone (CHEMTREC)	703-527-3887 CCN15781	
Email	info@zrcworldwide.com	

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Serious eye damage/eye irritation	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger	
Hazard statement	Extremely flammable aerosol. Causes serious eye irritation. May cause drowsiness or dizziness. Very toxic to aquatic life with long lasting effects. Contains gas under pressure; may explode if heated.	
Precautionary statement		
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid breathing gas. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear eye protection/face protection.	
Response	If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. Collect spillage.	
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None known.	
Supplemental information	None.	

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Zinc	7440-66-6	40 - 50
Acetone	67-64-1	15 - 25
Propane	74-98-6	5 - 15
Methyl Ethyl Ketone	78-93-3	5 - 10
Stoddard solvent	8052-41-3	5 - 10
N-Butane	106-97-8	3 - 8
Zinc oxide	1314-13-2	≤ 2

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

4. First-aid measures

Inhalation	Move to fresh air. Get medical attention if any discomfort continues.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
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. If eye irritation persists: Get medical advice/attention.
Ingestion	Not likely, due to the form of the product. Rinse mouth. Get medical attention if any discomfort continues.
Most important symptoms/effects, acute and delayed	Causes serious eye irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media	Dry chemicals. Foam. Class B fire extinguisher.
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Water runoff can cause environmental damage.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Collect spillage. Scoop up used absorbent into drums or other appropriate container. Prevent product from entering drains. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Keep away from open flames, hot surfaces and sources of ignition. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not taste or swallow. Avoid breathing gas. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Keep away from heat, sparks and open flame.

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
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm	
Methyl Ethyl Ketone (CAS 78-93-3)	PEL	590 mg/m3 200 ppm	
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm	
Stoddard solvent (CAS 8052-41-3)	PEL	2900 mg/m3	
Zinc oxide (CAS 1314-13-2)	PEL	500 ppm 5 mg/m3 5 mg/m3 15 mg/m3	Respirable fraction. Fume. Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL TWA	500 ppm 250 ppm	
Methyl Ethyl Ketone (CAS 78-93-3)	STEL TWA	300 ppm 200 ppm	
N-Butane (CAS 106-97-8)	STEL	1000 ppm	
Stoddard solvent (CAS 8052-41-3)	TWA	100 ppm	
Zinc oxide (CAS 1314-13-2)	STEL TWA	10 mg/m3 2 mg/m3	Respirable fraction. Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm	
Methyl Ethyl Ketone (CAS 78-93-3)	STEL TWA	885 mg/m3 300 ppm 590 mg/m3 200 ppm	
N-Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm	
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm	
Stoddard solvent (CAS 8052-41-3)	Ceiling	1800 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA Ceiling	350 mg/m3 15 mg/m3	Dust.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
	STEL	10 mg/m3	Fume.
	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*
Methyl Ethyl Ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Methyl Ethyl Ketone (CAS 78-93-3)

Can be absorbed through the skin.

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. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection

Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Eye wash fountain and emergency showers are recommended.

Skin protection

Hand protection

For prolonged or repeated skin contact use suitable protective gloves. Neoprene gloves are recommended.

Skin protection

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. 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	Gray liquid.
Physical state	Gas.
Form	Aerosol- Pressurized Liquid.
Color	Gray.
Odor	Hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	395.6 °F (202 °C)
Flash point	< 19.4 °F (< -7.0 °C) Tag Open Cup
Evaporation rate	> 1 BuAc (n-Butyl acetate=1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.1

Flammability limit - upper (%)	12.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	50 mm Hg (21°C / 70°F)
Vapor density	> 1 (24°C / 77°F)
Relative density	1.2
Solubility(ies)	
Solubility (water)	Slightly soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	10.01 lb/gal
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
VOC	< 30 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Avoid contact with acids and alkalis. Strong oxidizing agents. Water.
Hazardous decomposition products	Zinc oxides. CO, CO ₂ , Various hydrocarbon gases. Contact with acids will release flammable hydrogen gas.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Vapors may cause drowsiness and dizziness.
Skin contact	Prolonged or repeated contact may dry skin and cause irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Causes serious eye irritation. Symptoms include itching, burning, redness, and tearing of eyes. Vapors may cause drowsiness and dizziness.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
Dermal		
LD50	Rabbit	> 20 ml/kg
Inhalation		
LC50	Rat	50 mg/l, 8 Hours
Oral		
LD50	Rat	5800 mg/kg

Components	Species	Test Results
Propane (CAS 74-98-6)		
Acute		
Inhalation		
Gas		
LC50	Rat	> 80000 ppm, 15 Minutes
Stoddard solvent (CAS 8052-41-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5.2 mg/l, 4 hours
Oral		
LD50	Rat	> 5000 mg/kg
Zinc (CAS 7440-66-6)		
Acute		
Oral		
LD50	Rat	630 mg/kg
Skin corrosion/irritation	Not classified.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
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. Not classifiable as to carcinogenicity to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Not listed.		
NTP Report on Carcinogens		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not regulated.		
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not classified.	
Chronic effects	Prolonged inhalation may be harmful.	
Further information	No other specific acute or chronic health impact noted.	

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) > 100 mg/l, 96 hours
Zinc (CAS 7440-66-6)		
Aquatic		
Crustacea	LC50	Daphnia magna 0.068 mg/l, 48 hours

Components	Species	Test Results
Zinc oxide (CAS 1314-13-2)		
Aquatic		
Crustacea	LC50 Water flea (Daphnia magna)	0.098 mg/l, 48 Hours
Persistence and degradability	No data is available on the degradability of this product.	
Bioaccumulative potential	No data available for this product.	
Partition coefficient n-octanol / water (log Kow)		
Acetone (CAS 67-64-1)		-0.24
Methyl Ethyl Ketone (CAS 78-93-3)		0.29
N-Butane (CAS 106-97-8)		2.89
Propane (CAS 74-98-6)		2.36
Stoddard solvent (CAS 8052-41-3)		3.16 - 7.15
Mobility in soil	The product is slightly soluble in water.	
Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.	

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F D003: Waste Reactive material
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not available.
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not available.
Environmental hazards	Yes
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not available.

Environmental hazards**Marine pollutant** Yes**EmS** F-D, S-U**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.**General information** Limited Quantity exemption may apply.**15. Regulatory information****US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Zinc (CAS 7440-66-6) 1.0 % One-Time Export Notification only.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Methyl Ethyl Ketone (CAS 78-93-3)	LISTED
N-Butane (CAS 106-97-8)	LISTED
Propane (CAS 74-98-6)	LISTED
Zinc (CAS 7440-66-6)	LISTED
Zinc oxide (CAS 1314-13-2)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - Yes
 Pressure Hazard - Yes
 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	7440-66-6	40 - 50
Zinc oxide	1314-13-2	≤ 2

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)N-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)**Safe Drinking Water Act (SDWA)** Not regulated.**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**Acetone (CAS 67-64-1) 6532
Methyl Ethyl Ketone (CAS 78-93-3) 6714**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**Acetone (CAS 67-64-1) 35 %WV
Methyl Ethyl Ketone (CAS 78-93-3) 35 %WV**DEA Exempt Chemical Mixtures Code Number**Acetone (CAS 67-64-1) 6532
Methyl Ethyl Ketone (CAS 78-93-3) 6714**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

Acetone (CAS 67-64-1)
Methyl Ethyl Ketone (CAS 78-93-3)
N-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Stoddard solvent (CAS 8052-41-3)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

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

Acetone (CAS 67-64-1)
Methyl Ethyl Ketone (CAS 78-93-3)
N-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Stoddard solvent (CAS 8052-41-3)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

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

Acetone (CAS 67-64-1)
Methyl Ethyl Ketone (CAS 78-93-3)
N-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Stoddard solvent (CAS 8052-41-3)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Methyl Ethyl Ketone (CAS 78-93-3)
N-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Stoddard solvent (CAS 8052-41-3)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

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)	No
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 14-December-2013
Revision date 31-May-2017
Version # 04

NFPA ratings



List of abbreviations

LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.
STEL: Short term exposure limit.
TWA: Time weighted average.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.