Zinc Oxide

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revision Date: 05/09/2018 Version: 4.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Substance

Product Name: Zinc Oxide, K, L, S CPROX

CAS-No.: 1314-13-2

Formula: ZnO

Synonyms: Zinc White; Flowers of Zinc; Chinese White

Intended Use of the Product

Use Of The Substance/Mixture: Industrial use.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number : Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Pictograms :

GHS09

Signal Word : Warning

Hazard Statements : H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements : P273 - Avoid release to the environment.
P391 - Collect spillage.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

No additional information available

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Name : Zinc Oxide, CPROX

CAS-No. : 1314-13-2

Name	Product Identifier	%*	GHS Ingredient Classification
Zinc oxide (ZnO)	(CAS-No.) 1314-13-2	80 - 100[+]	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Water	(CAS-No.) 7732-18-5	0 - 20	Not Classified

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

[+]The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with Regulations Amending the Hazardous Products Regulations (HPR) SOR/2018-68 and 29 CFR 1910.1200.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area.

Skin Contact: Remove contaminated clothing. Drench affected area with water or soap and water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting.

Most Important Symptoms and Effects Both Acute and Delayed

General: None expected under normal conditions of use.

Inhalation: Dust from this product may cause irritation to the respiratory tract.

Skin Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Eye Contact: Dust from this product may cause minor eye irritation.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: If heated to the point of fume generation zinc fumes may cause metal fume fever. Otherwise, zinc is non-toxic.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: None known.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Violent reaction may occur if chlorinated rubber and zinc oxide are heated to 215°C. Exothermic reaction will occur when mixed with flax oil with the possibility of ignition. Violent reaction may occur if magnesium powder or aluminum powder is heated with zinc oxide with the possibility of ignition.

Advice for Firefighters

Precautionary Measures Fire: Not applicable.

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: If heated to the point of fume generation zinc fumes may cause metal fume fever. Otherwise, zinc is non-toxic.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not allow product to spread into the environment.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Collect spillage. Clean up spills immediately and dispose of waste safely.

Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Use care during processing to minimize generation of dust.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids. Strong bases.

Specific End Use(s)

Industrial use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Zinc oxide (ZnO) (1314-13-2)		
Mexico	OEL TWA (mg/m³)	5 mg/m³ (fume) 10 mg/m³ (dust)
Mexico	OEL STEL (mg/m³)	10 mg/m³ (fume)
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (respirable particulate matter)
USA ACGIH	ACGIH STEL (mg/m³)	10 mg/m³ (respirable particulate matter)
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ (fume) 15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³ (dust and fume)
USA NIOSH	NIOSH REL (STEL) (mg/m³)	10 mg/m³ (fume)
USA NIOSH	NIOSH REL (ceiling) (mg/m³)	15 mg/m³ (dust)
USA IDLH	US IDLH (mg/m³)	500 mg/m³
Alberta	OEL STEL (mg/m³)	10 mg/m³ (respirable)
Alberta	OEL TWA (mg/m³)	2 mg/m³ (respirable)
British Columbia	OEL STEL (mg/m³)	10 mg/m³ (respirable)
British Columbia	OEL TWA (mg/m³)	2 mg/m³ (respirable)
Manitoba	OEL STEL (mg/m³)	10 mg/m³ (respirable particulate matter)
Manitoba	OEL TWA (mg/m³)	2 mg/m³ (respirable particulate matter)
New Brunswick	OEL STEL (mg/m³)	10 mg/m³ (fume)
New Brunswick	OEL TWA (mg/m³)	10 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica, dust) 5 mg/m³ (fume)

Newfoundland & Labrador	OEL STEL (mg/m³)	10 mg/m³ (respirable particulate matter)
Newfoundland & Labrador	OEL TWA (mg/m³)	2 mg/m³ (respirable particulate matter)
Nova Scotia	OEL STEL (mg/m³)	10 mg/m³ (respirable particulate matter)
Nova Scotia	OEL TWA (mg/m³)	2 mg/m³ (respirable particulate matter)
Nunavut	OEL STEL (mg/m³)	10 mg/m³ (dust and fume; respirable fraction)
Nunavut	OEL TWA (mg/m³)	2 mg/m³ (dust and fume; respirable fraction)
Northwest Territories	OEL STEL (mg/m³)	10 mg/m³ (dust and fume; respirable fraction)
Northwest Territories	OEL TWA (mg/m³)	2 mg/m³ (dust and fume; respirable fraction)
Ontario	OEL STEL (mg/m³)	10 mg/m³ (respirable)
Ontario	OEL TWA (mg/m³)	2 mg/m³ (respirable)
Prince Edward Island	OEL STEL (mg/m³)	10 mg/m³ (respirable particulate matter)
Prince Edward Island	OEL TWA (mg/m³)	2 mg/m³ (respirable particulate matter)
Québec	VECD (mg/m³)	10 mg/m³ (fume)
Québec	VEMP (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust) 5 mg/m³ (fume)
Saskatchewan	OEL STEL (mg/m³)	10 mg/m³ (dust and fume, respirable fraction)
Saskatchewan	OEL TWA (mg/m³)	2 mg/m³ (dust and fume, respirable fraction)
Yukon	OEL STEL (mg/m³)	10 mg/m³ (fume)
Yukon	OEL TWA (mg/m³)	5 mg/m³ (fume) 30 mppcf (dust) 10 mg/m³ (dust)

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective goggles.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Safety glasses. In case of dust production: protective goggles.

Skin and Body Protection: Not available

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	White or yellowish-white powder or crystals
Odor	:	Odorless
Odor Threshold	:	Not available
pH	:	6.5 - 7 (estimated)
Evaporation Rate	:	Not available
Melting Point	:	1975 °C (3587 °F)
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	Not applicable
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available

Lower Flammable Limit	:	Not applicable
Upper Flammable Limit	:	Not applicable
Vapor Pressure	:	4 mm Hg
Relative Vapor Density at 20°C	:	Not applicable
Relative Density	:	Not available
Specific Gravity / Density	:	35 - 45 lb/ft^3
Specific Gravity	:	5.61 @ 20°C (68 °F)
Solubility	:	Water: Practically insoluble.
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available
VOC content	:	0 %

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Violent reaction may occur if chlorinated rubber and zinc oxide are heated to 215°C. Exothermic reaction will occur when mixed with flax oil with the possibility of ignition. Violent reaction may occur if magnesium powder or aluminum powder is heated with zinc oxide with the possibility of ignition.

Chemical Stability: Product is stable.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids. Strong bases.

Hazardous Decomposition Products: None known.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

pH: 6.5 - 7 (estimated)

Eye Damage/Irritation: Not classified

pH: 6.5 - 7 (estimated)

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Effects After Inhalation: Dust from this product may cause irritation to the respiratory tract.

Symptoms/Effects After Skin Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Effects After Eye Contact: Dust from this product may cause minor eye irritation.

Symptoms/Effects After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: If heated to the point of fume generation zinc fumes may cause metal fume fever. Otherwise, zinc is non-toxic.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Zinc oxide (ZnO) (1314-13-2)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

Zinc oxide (ZnO) (1314-13-2)	
LC50 Fish 1	780 µg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.122 mg/l
NOEC Chronic Fish	0.026 mg/l (Species: Jordanella floridae)

Persistence and Degradability

Zinc Oxide (1314-13-2)	
Persistence and Degradability	Not established. May cause long-term adverse effects in the environment.

Bioaccumulative Potential

Zinc Oxide (1314-13-2)	
Bioaccumulative Potential	Not established.

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Ecology - Waste Materials: This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

*When shipped in accordance with US DOT 49 CFR part 171.4(c) and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.

**When shipped in accordance with the Canada Transport of Dangerous Goods Regulations part 1.45.1 and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail

TRANSPORTATION CLASSIFICATION	**DOT**	**TDG**	**IMDG**	**IATA**
Identification Number	UN3077	UN3077	UN3077	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (CONTAINS ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ZINC OXIDE)
Transport Hazard Class(es)	9	9	9	9
				
Packing Group	III	III	III	III
Environmental Hazards	**Marine Pollutant :** Yes*	**Marine Pollutant** : Yes**	**Marine Pollutant** : Yes	**Marine Pollutant**: N/A
Emergency Response	**ERG Number :** 171	**ERAP Index:** Not applicable	**EMS:** F-A, S-F	**ERG code (IATA):** 9L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	**CERCLA RQ**	**EPCRA 304 RQ**	**SARA 302 TPQ**	**SARA 313**

Zinc oxide (ZnO) (1314-13-2)	Not applicable	Not applicable	Not applicable	No

SARA 311/312 Not present

US TSCA Flags Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Zinc oxide (ZnO) (1314-13-2)	No	No	No	No

State Right-To-Know Lists

Zinc oxide (ZnO) (1314-13-2)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Zinc oxide (ZnO) (1314-13-2)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Zinc oxide (ZnO) (1314-13-2)	Yes	Yes	Yes	Yes	No	No	No	Yes

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Zinc oxide (ZnO) (1314-13-2)	Yes	Yes	No	No	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/09/2018

Revision Summary

Section	Change	Date Changed
3	Language modified, HPR trade secret statement	05/09/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

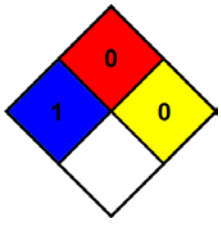
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

NFPA 704

NFPA Health Hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA Fire Hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA Reactivity Hazard : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS Rating

Health	:	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	:	0 Minimal Hazard
Physical	:	0 Minimal Hazard
PPE		See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
EPA – Environmental Protection Agency
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity
ERAP Index – Emergency Response Assistance Plan Quantity Limit
ErC50 - EC50 in Terms of Reduction Growth Rate
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)
ERG No. - Emergency Response Guide Number
HCCL - Hazard Communication Carcinogen List
HMIS – Hazardous Materials Information System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association – Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China
IMDG - International Maritime Dangerous Goods Code
INSQ - Mexican National Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - National Institute for Occupational Safety and Health
NLP - Europe No Longer Polymers List
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
OSHA – Occupational Safety and Health Administration
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE – Personal Protective Equipment
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
SARA 313 - Section 313, 40 CFR Part 372
SRCL - Specifically Regulated Carcinogen List
STEL - Short Term Exposure Limit
SVHC – European Candidate List of Substance of Very High Concern
TDG – Transport Canada Transport of Dangerous Goods Regulations
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TSCA – United StatesToxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.

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