CHIPQUIK® Lead Free Solder Wire and Spheres

Safety Data Sheet (SDS)

www.chipquik.com

To comply with European CLP Regulation 1272/2008

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME: Chip Quik Lead Free Solder Wire and Spheres Series: SMD_NL
SYNONYMS: Solder Spool, Solder Sticks, Solder Coil, Chip Quik Alloy, Removal Alloy, Rework Solder, Solder Spheres
PART NUMBERS: SMD1NL, SMD4.5NL, SMD8NL, SMD16NL, SMD32NL, SMD32NLS, SMD6000

1.2 Relevant identified uses of the substance or mixture and uses advised against
PRODUCT USE: Soldering components for bonding semiconductor chips and packages to circuit boards. Removal of semiconductor chips and packages from circuit boards.

1.3 MANUFACTURER: Chip Quik Inc.
ADDRESS: 3rd Floor, 207 Regent Street, London W1B 3HH (UK and EU)
PHONE: (508) 477-2264
1.4 EMERGENCY PHONE: +44 20 3868 7152 (UK and EU 24/7)

REVISION DATE: 2021/11/22
REVISION NUMBER: EU3.7
REVISED BY: Chip Quik Product Safety

2. HAZARD IDENTIFICATION

2.1 Classified in accordance with European CLP Regulation 1272/2008

Acute Toxicity	4
Skin Irritant	2
Skin Sensitization	1

CHEMICAL NAME: NA
CHEMICAL FAMILY: Mixture
CHEMICAL FORMULA: Proprietary

ROUTES OF ENTRY: Inhalation, Ingestion, Skin/Eye Contact

TARGET ORGANS: NA

2.2 Label Elements:
GHS/CLP LABEL ELEMENTS:

Signal Word: Warning

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Precautionary statement(s)

P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P233	Keep container tightly closed.
P260	Do not breathe dust/fume/gas/mist/vapor/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P271	Use in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301/P330/P331/P310	IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER/Doctor.

P303/P361/P352/P333/P313	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with soap & water. Get medical advice/attention if skin irritation or rash occurs or if you feel unwell.
P304/P340/312	IF INHALED: Remove victim to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P305/P351/338/P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call POISON CENTER/Doctor.
P308/P313	IF EXPOSED OR CONCERNED: Get medical advice/attention.
P342/P311	IF EXPERIENCING RESPIRATORY SYMPTOMS: Call POISON CENTER/Doctor.
P362	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P402/P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other Hazards:
POTENTIAL HEALTH EFFECTS (CHRONIC and OVEREXPOSURE)
Tin: Dust or fumes may cause irritation of the skin mucous membranes and may result in a benign Pneumoconiosis (Stannosis).
Silver: May cause discoloration of eyes and skin (Argyia).
Bismuth: May cause foul breath, a blue-black line on the gums, and Stomatitis.
Antimony: May cause gastrointestinal upset, sleeplessness, irritability, and muscular pain.
Indium: May cause weight loss, pulmonary edema, blood damage and degenerative changes in liver and kidneys.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE: Diseases of the blood-forming organs, kidneys, nervous and possibly reproductive systems. Occupational Asthma.

SECTION 2 NOTES:
Chip Quik Inc. does not recommend, manufacture, market, or endorse any of its products for human consumption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Classified in accordance with European CLP Regulation 1272/2008

Hazardous Ingredients [(1)]	C.A.S. Number	EC Number	Weight Percent	Classification
Modified Rosins (Rosin) [(2)]	8050-09-7	232-475-7	<4.5	Skin Sens. 1; H317
Pine Oil Derivatives (Terpineol)	8000-41-7	232-268-1	<0.5	Skin Irrit. 2; Eye Irrit. 2; H315, H319
Mixed Carboxylic Acids (Maleic Acid)[(2)]	110-16-7	203-742-5	<0.4	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Skin Sens. 1; STOT SE 3; H302, H312, H315, H317, H318, H335
Tin	7440-31-5	231-141-8	<50	Eye Irrit. 2; STOT SE 3; H319, H335
Bismuth	7440-69-9	231-177-4	<60	-
Indium	7440-74-6	231-180-0	<50	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H302, H332, H312, H315, H319, H335

Non-Hazardous Ingredients	C.A.S. Number	EC Number	Weight Percent	Classification
Surfactants	NA	NA	<0.4	NA
Rheological Modifier	NA	NA	<0.5	NA

4. FIRST-AID MEASURES

Signs and symptoms of exposure: Inhalation-Nose and throat irritation, headache, dizziness, difficulty breathing, coughing. Ingestion-nausea, vomiting, cramps. Skin-redness, burning, rash, dryness. Eye-redness, burning, tearing, blurred vision.

4.1 Emergency first aid procedures:

EYES: Flush with plenty of water, contact a physician. If contact lenses can be removed easily, flush eyes without contact lenses.

SKIN: Wash affected area with plenty of warm, soapy water. If irritation persists, seek medical attention.

INGESTION: Call a physician or Poison Control Center immediately. Do not induce vomiting. Drink large amounts of water. Never give anything by mouth to an unconscious person

INHALATION: Remove to fresh air. Support respiration if required. If not breathing, seek immediate medical attention.

4.2 Not available

4.3 Not available

5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA: Dry chemical, foam

5.2 SPECIAL FIRE FIGHTING PROCEDURES: Do not use water. Use (EU: EN 137:2006) self-contained Breathing Apparatus and full protective clothing if involved in a fire.

5.3 UNUSUAL FIRE AND EXPLOSION HAZARDS: May release Toxic metal and oxide fumes. High concentrations of dust may present explosion hazard. Water trapped below molten metal may explode thus spattering molten metal.

SECTION 5 NOTES:

Molten solder alloys consisting of Antimony, Bismuth, Copper, Indium, Silver, and/or Tin do not produce significant quantities of fumes below 900° F.

6. ACCIDENTAL RELEASE MEASURES

6.1 PRECAUTIONS AND EQUIPMENT: Material is extremely thick and will not flow out.

6.2 ACCIDENTAL RELEASE MEASURES: If material spills or leaks use a spatula to collect and place it in a plastic or glass jar. Remove traces of residue using cloth rags or paper towels moistened with Isopropyl Alcohol. Exposure to spilled material may be irritating. Follow on-site personal protective equipment recommendations.

6.3 ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Collect spillage.

6.4 SECTION 6 NOTES:
See Sections 2, 4, and 7 for additional information.

7. HANDLING AND STORAGE

7.1/7.2 HANDLING/STORAGE: Keep containers tightly closed when not in use. Use care to avoid spills. Avoid inhalation of fumes or dust. Avoid contact with eyes, skin, and clothing. Store in a closed corrosive resistant container, with corrosive resistant liner, in cool dry place. Wear appropriate personal protective equipment when working with or handling. Always wash hands thoroughly after handling this product. Dispose of following Federal, State/Provincial, and Local regulations.

7.3 OTHER PRECAUTIONS: Empty containers may retain product residues in vapor, liquid, and/or solid form. All labeled hazard precautions should be observed.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in work areas. Always wash hands after handling material and before applying or using cosmetics/food/drink/tobacco.

SECTION 7 NOTES:
Keep out of reach of children.
Not for internal consumption.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Occupational Exposure Limit Values:

Rosin flux fumes (as total resin acids)
MEL: 0.05 mg/m^3 8h TWA.
MEL: 0.15 mg/m^3 15 min.

Extraction is necessary to remove fumes evolved during reflow.

Also see section 3.

8.2 ENGINEERING CONTROLS: Use only with production equipment designed for use with solder wire.

VENTILATION: Provide sufficient mechanical (general and/or local exhaust) ventilation.

RESPIRATORY PROTECTION: A (EU: EN 140:1998, EN 14387:2004 A)-approved air-purifying respirator with fume/organic chemical cartridge should be worn when airborne concentrations may be exceeded. General and local exhaust ventilation is the preferred means of protection.

EYE PROTECTION: Use with appropriate eye protection: Goggles or face shield (EU: EN 166-S 3 9).

SKIN PROTECTION: Protective gloves should be worn when the possibility of skin contact exists (EU: EN 374-1:2003).

PROTECTIVE CLOTHING OR EQUIPMENT: Work clothes should be worn and laundered in accordance with current Lead (Pb) standards.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in areas where solder products may be used. Always wash hands after handling soldering products and before applying or using cosmetics/food/drink/tobacco.

OTHER: Maintain eye wash stations in work areas. Avoid the use of contact lenses in high fume areas. Clean protective equipment regularly. Clean up spills immediately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1

APPEARANCE:	Silver Grey Solid
ODOR:	Odorless
ODOR THRESHOLD:	NE
pH as SUPPLIED:	NA
MELTING POINT:	Varies
FREEZING POINT:	Varies
INITIAL BOILING POINT:	Varies
BOILING RANGE:	NA
FLASH POINT:	NA
EVAPORATION RATE:	NA
FLAMMABILITY (solid):	NE
UPPER/LOWER FLAMMABILITY:	NE
UPPER/LOWER EXPLOSIVE LIMITS:	NE

VAPOR PRESSURE (mmHg): NA
VAPOR DENSITY (AIR = 1): NA
RELATIVE DENSITY: NE
SOLUBILITY IN WATER: Insoluble
PARTITION COEFFICIENT (n-octanol/water): NE
AUTOIGNITION TEMPERATURE: NE
DECOMPOSITION TEMPERATURE: NE
VISCOSITY: NA

SECTION 9 NOTES:
Other physical and chemical properties depend on alloy composition.

10. STABILITY AND REACTIVITY

10.1 Reactivity: NE
10.2 STABILITY: Stable
10.3 POSSIBILITY OF HAZARDOUS REACTIONS: NE
10.4 CONDITIONS TO AVOID (STABILITY): NE
10.5 INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizing materials, acids, hydrogen peroxide, bases
10.6 HAZARDOUS DECOMPOSITION/BY-PRODUCTS: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.

11. TOXICOLOGICAL INFORMATION

INHALATION:
This product does not present a risk at ambient temperatures. The flux fumes evolved during soldering will irritate the nose, throat and lungs. Repeated or prolonged exposure to flux fumes may cause an allergic affect which may lead to occupational asthma.

SKIN:
Contact with flux fumes and flux residues may cause irritation and sensitization.

EYES:
Flux fumes may cause irritation.

Health Hazards (acute and chronic): Contact with dust and fumes may cause skin, eye and respiratory irritation. Ingestion and/or inhalation of material or fumes may result in flu like symptoms, insomnia, muscle weakness, nausea and abdominal pain. Gross inhalation or ingestion may be toxic and can result in death. Symptoms of toxicity may take hours or days to manifest. Chronic exposures, inhalation and ingestion, may result in kidney, red blood cell, reproductive and nervous system effects. Health effects may be cumulative over many exposures. Studies show that health risks vary by individual. Minimize exposure as a precaution.

11.1 ACUTE TOXICITY:

Product/Ingredient Name	Result	Species	Dose	Exposure
Rosin	LD50 Oral	Rat	7600 mg/kg	-
Terpineol	LD50 Oral LD50 Inhalation LD50 Dermal	Rat Rat Rat	2000 mg/kg 4.76 mg/l 2000 mg/kg	- 4 hours -
Maleic acid	LD50 Oral LD50 Inhalation LD 50 Dermal	Rat Rat Rabbit	708 mg/kg 720 mg/m^3 1560 mg//kg	Remarks: Behavioral: Convulsions or effect on seizure threshold. Behavioral: Muscle weakness. Gastrointestinal: Ulceration or bleeding from stomach. 1 hour Remarks: Behavioral: Tremor
Antimony	LD50 Ingested	Rat	7000 mg/kg	-
Silver	LD50 Oral	Mouse	100 mg/kg	-

SKIN CORRISION/IRRITATION: NE
SERIOUS EYE DAMAGE/IRRITATION: NA
RESPIRATORY OR SKIN SENSITIZATION: NE
GERM CELL MUTAGENICITY: NA
CARCINOGENICITY:

ACGIH: NA	**NTP:** NA	**IARC:** NA

REPRODUCTIVE TOXICITY: NA
STOT-SINGLE EXPOSURE:

Product/Ingredient Name	Category	Route of exposure	Target organs
Maleic acid	Category 3	Not applicable	Respiratory tract irritation

STOT-REPEATED EXPOSURE: NA
ASPIRATION HAZARD: NA

SECTION 11 NOTES:
This product has not been tested as a whole to determine its hazards. Synergistic or additive effects of the above chemicals are unknown, as are the effects of exposure to these chemicals in addition to others present in the work place. See Section 2 for additional health hazards.

12. ECOLOGICAL INFORMATION

12.1 TOXICITY:

Product/Ingredient Name	Result	Species	Exposure
Silver	Acute EC50 1.4 µg/l Marine water	Algae - Chroomonas sp.	4 days
	Acute EC50 0.24 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 11 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 2.13 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 5 mg/l Marine water	Algae - Glenodinium halli	72 hours
Rosin	Acute LC50 60.3 mg/l Fresh water	Brachydanio rerio (zebra fish)	96 hours
Terpineol	Acute LC50 62.80 mg/l Fresh water	Danio rerio (zebra fish)	96 hours
	Acute LC50 68 mg/l Marine water	Algae – Pseudokirchneriella subcapitata (green algae)	72 hours
Maleic acid	Acute EC50 316200 µg/l Fresh water	Daphnia - Daphnia magna - Larvae	48 hours
	Acute LC50 5000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Copper	Acute EC50 1100 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute EC50 2.1 µg/l Fresh water	Daphnia - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute IC50 13 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute IC50 5.4 mg/l Marine water	Aquatic plants - Plantae - Exponential growth phase	72 hours
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 7.56 µg/l Marine water	Fish - Periophthalmus waltoni - Adult	96 hours
	Chronic NOEC 2.5 µg/l Marine water	Algae - Nitzschia closterium - Exponential growth phase	72 hours
	Chronic NOEC 7 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Chronic NOEC 0.02 mg/l Fresh water	Crustaceans - Cambarus bartonii - Mature	21 days
	Chronic NOEC 2 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.8 µg/l Fresh water	Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling)	6 weeks

PERSISTENCE AND DEGRADIBILITY: NE

BIOACCUMULATIVE POTENTIAL:

Product/Ingredient Name	$LogP_{ow}$	BCF	Potential
Silver	-	70	Low
Rosin	1.9 to 7.7	-	High
Terpineol			NE
Maleic acid	-1.3	-	Low

MOBILITY IN SOIL: NE

12.5 RESULT OF PBT and vPvB ASSESSMENT: Not applicable

OTHER ADVERSE EFFECTS: NE

13. DISPOSAL CONSIDERATIONS

13.1 WASTE DISPOSAL METHOD: Scrap and waste should be recycled or stored in a dry, sealed container for later disposal. Disposal must be in accordance with Federal, State/Provincial, and Local Regulations.

OTHER PRECAUTIONS: Avoid skin & eye contact, inhalation & ingestion of fumes and material. Wash contaminated clothing before reuse. Keep away from children.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

14.1 UN Number: Not available

14.2 UN Proper Shipping Name: Not available

14.3 TRANSPORT HAZARD CLASSES:

US DOT Hazardous Material Classification: Non-Hazardous
Water Transportation: Non-Hazardous
IATA Hazardous Material Classification: Non-Hazardous
ADR Road Regulations Not regulated
IMDG Sea Regulations Not regulated
ADG Land Transportation Not regulated

14.4 Packaging Group: Not applicable

14.5 Environmental Hazards:	None
14.6	Not applicable
14.7	Not applicable

15. REGULATORY INFORMATION

All ingredients used to manufacture this product are listed on the EPA TSCA Inventory. Finished product is not listed on the EPA TSCA Inventory.

15.1

EU REGULATIONS:	Not regulated
U.S. FEDERAL REGULATIONS:	Not regulated
STATE REGULATIONS:	Not regulated
INTERNATIONAL REGULATIONS:	Not regulated
AUSTRALIAN REGULATIONS:	Not regulated

15.2 Not applicable

16. OTHER INFORMATION

LEGEND:

ACGIH	American Conference of Governmental Industrial Hygienists
ADG	Australian Dangerous Goods Code
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
BCF	Bioconcentration factor
C.A.S.	Chemical Abstract Service
CLP	Classification, Labeling and Packaging
DOT	Department of Transportation
EC	Effective Concentration
EC Number	European Community Number
EPA	Environmental Protection Agency
GHS	Global Harmonized System
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
LC	Lethal Concentration
LD	Lethal Dose
MEL	Maximum Exposure Limit
NA	Not available
NE	Not established
NIOSH	National Institute for Occupational Safety & Health
NOEC	No observed effective concentration
NOHSC	National Occupational Health and Safety Commission (Australia)
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
P_{ow}	Octanol water partition coefficient
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
STOT	Specific target organ toxicity
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA:	Time Weighted Average
US DOT:	United States Department of Transportation

PREPARATION INFORMATION:
This update supersedes all previously released documents.

DISCLAIMER:
The information and recommendations contained within this publication have been compiled from sources believed to be reliable and to represent the best information available to Chip Quik at the time of issue. No warranty, guarantee, or representation is made by Chip Quik nor does Chip Quik assume any responsibility in connection there within; nor can it be assumed that all acceptable safety measures or other safety measures may not be required under particular or exceptional conditions or circumstances. The data on this Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Safety Data Sheet as a source for hazard information.

Copyright © 1994-2021 Chip Quik® Inc.

CHIPQUIK®

Tacky Flux

Safety Data Sheet (SDS)

www.chipquik.com

To comply with European CLP Regulation 1272/2008

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME: Chip Quik Tacky Flux Series: SMD291, SMD291NL, SMD4300, SMDLT
SYNONYMS: Tack Flux, Gel Flux, Paste Flux
PART NUMBERS: SMD191, SMD191_3CC, SMD291, SMD291_3CC, SMD29130CC, SMD2915CC, SMD291NL, SMD4300, SMD4300TF10, SMD4300TF30, SMD291ST2CC6, SMD291ST8CC, SMD29175G, SMD291150G, SMD291NL75G, SMD291NL150G, SMD430075G, SMD4300150G, SMDLT75G, SMDLT150G, SMD1(flux), SMD1NL(flux), SMD2000(flux), SMD6000(flux), SMDST2CC4, RMA591, RMA591NL, SMD491, NC191, NC191-30CC, NC191-2CC6, SMDLT, SMDLT10, WS991, CQ4300-2OZ, SMD291-5M, SMD291-10M, SMD291NL-5M, SMD291NL-10M, SMDLT-5M, SMDLT-10M, SMD491-5M, SMD491-10M, RMA591-5M, RMA591-10M, RMA591NL-5M, RMA591NL-10M, SMD4300-5M, SMD4300-10M, WS991-5M, WS991-10M, NC551-3CC, NC551-5CC, NC551-10CC, NC551-30CC, NC551-3M, NC551-5M, NC551-10M, SGF991-5CC, SGF991-10CC, SGF991-30CC, NC191-5M, NC191-10M, NI3300-5M, NI3300-10M, NCP291-2OZ, SMDLTLFP15T4(flux), SMDLTLFP60T4(flux), SMDLTLFP250T4-2MIX(flux), SMD291SNL15T4(flux), SMD291SNL60T4(flux), SMD291SNL250T4-2MIX(flux), NI3300LTLFP15T3(flux), NI3300LTLFP60T3(flux), NI3300LTLFP250T3(flux), NI3300SNL15T3(flux), NI3300SNL60T3(flux), NI3300SNL250T3(flux), SMD291NL10CC, SMD291NL30CC, SMD291NLST2CC6, SMD4300ST2CC6, SMDLTST2CC6, WS995, SMDIN52SN48(flux)

1.2 Relevant identified uses of the substance or mixture and uses advised against
PRODUCT USE: Bonding solder joints in production and repair of circuit boards.

1.3 MANUFACTURER: Chip Quik Inc.
ADDRESS: 3rd Floor, 207 Regent Street, London W1B 3HH (UK and EU)
PHONE: (508) 477-2264
1.4 EMERGENCY PHONE: +44 20 3868 7152 (UK and EU 24/7)

REVISION DATE: 2022/06/24
REVISION NUMBER: EU4.4
REVISED BY: Chip Quik Product Safety

2. HAZARD IDENTIFICATION

2.1 Classified in accordance with European CLP Regulation 1272/2008

Acute Toxicity	4
Skin Irritant	2
Skin Sensitization	1

CHEMICAL NAME: NA
CHEMICAL FAMILY: Mixture
CHEMICAL FORMULA: Proprietary

ROUTES OF ENTRY: Inhalation, Ingestion, Skin/Eye Contact

TARGET ORGANS: NA

2.2 Label Elements:
GHS/CLP LABEL ELEMENTS:

Signal Word: Warning

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Precautionary statement(s)

P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P233	Keep container tightly closed.

P260	Do not breathe dust/fume/gas/mist/vapor/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P271	Use in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301/P330/P331/P310	IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER/Doctor.
P303/P361/P352/P333/P313	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with soap & water. Get medical advice/attention if skin irritation or rash occurs or if you feel unwell.
P304/P340/312	IF INHALED: Remove victim to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P305/P351/338/P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call POISON CENTER/Doctor.
P308/P313	IF EXPOSED OR CONCERNED: Get medical advice/attention.
P342/P311	IF EXPERIENCING RESPIRATORY SYMPTOMS: Call POISON CENTER/Doctor.
P362	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P402/P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other Hazards:
POTENTIAL HEALTH EFFECTS:

EYE CONTACT:	May cause moderate irritation. Do not allow material to come in contact with eyes.
SKIN CONTACT:	May cause moderate skin irritation.
INHALATION:	May cause irritation to the respiratory tract.
INGESTION:	Harmful if swallowed. May cause irritation to the mouth, throat, and stomach. May cause abdominal discomfort, nausea, vomiting, and/or diarrhea.
CHRONIC:	Not established.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE: Diseases of the blood-forming organs, kidneys, nervous and possibly reproductive systems. Occupational Asthma.

SECTION 2 NOTES:
Chip Quik Inc. does not recommend, manufacture, market, or endorse any of its products for human consumption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Classified in accordance with European CLP Regulation 1272/2008

Hazardous Ingredients	C.A.S. Number	EC Number	Weight Percent	Classification
Modified Rosins (Rosin)	8050-09-7	232-475-7	<45	Skin Sens. 1; H317
Pine Oil Derivatives (Terpineol)	8000-41-7	232-268-1	<5	Skin Irrit. 2; Eye Irrit. 2; H315, H319
Mixed Carboxylic Acids (Maleic Acid)	110-16-7	203-742-5	<4	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Skin Sens. 1; STOT SE 3; H302, H312, H315, H317, H318, H335

Non-Hazardous Ingredients	C.A.S. Number	EC Number	Weight Percent	Classification
Surfactants	NA	NA	<4	NA
Rheological Modifier	NA	NA	<5	NA
Solubilizer	NA	NA	<37	NA

4. FIRST-AID MEASURES

4.1 Emergency first aid procedures:

EYES: Flush with plenty of water, contact a physician. If contact lenses can be removed easily, flush eyes without contact lenses.

SKIN: Wash affected area with plenty of warm, soapy water. If irritation persists, seek medical attention.

INGESTION: Call a physician or Poison Control Center immediately. Do not induce vomiting.

INHALATION: Remove to fresh air. If not breathing, seek immediate medical attention.

4.2 Not available

4.3 Not available

5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA: Dry chemical, foam

5.2 UNUSUAL FIRE AND EXPLOSION HAZARDS: This product does not present any unusual fire and explosion hazards.

5.3 SPECIAL FIRE FIGHTING PROCEDURES: Do not use water. Use (EU: EN 137:2006) self-contained Breathing Apparatus and full protective clothing if involved in a fire.

6. ACCIDENTAL RELEASE MEASURES

6.2 ACCIDENTAL RELEASE MEASURES: If material spills or leaks use a spatula to collect and place it in a plastic or glass jar. Remove traces of residue using cloth rags or paper towels moistened with Isopropyl Alcohol. Exposure to spilled material may be irritating. Follow on-site personal protective equipment recommendations.

6.3 ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Collect spillage.

6.4 SECTION 6 NOTES:
See Sections 2, 4, and 7 for additional information.

7. HANDLING AND STORAGE

7.1/7.2 HANDLING/STORAGE: Keep containers tightly closed when not in use. Use care to avoid spills. Avoid inhalation of fumes or dust. Avoid contact with eyes, skin, and clothing. Store in a closed corrosive resistant container, with corrosive resistant liner, in cool dry place. Wear appropriate personal protective equipment when working with or handling. Always wash hands thoroughly after handling this product. Dispose of following Federal, State/Provincial, and Local regulations.

7.3 OTHER PRECAUTIONS: Empty containers may retain product residues in vapor, liquid, and/or solid form. All labeled hazard precautions should be observed.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in work areas. Always wash hands after handling material and before applying or using cosmetics/food/drink/tobacco.

SECTION 7 NOTES:
Keep out of reach of children.
Not for internal consumption.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Occupational Exposure Limit Values:

Rosin flux fumes (as total resin acids)
MEL / WEL: 0.05 mg/m^3 8h TWA.
MEL / WEL: 0.15 mg/m^3 15 min.

Extraction is necessary to remove fumes evolved during reflow.

Also see section 3.

8.2 ENGINEERING CONTROLS: Use only with production equipment designed for use with tacky flux.

VENTILATION: Provide sufficient mechanical (general and/or local exhaust) ventilation.

RESPIRATORY PROTECTION: A (EU: EN 140:1998, EN 14387:2004 A)-approved air-purifying respirator with fume/organic chemical cartridge should be worn when airborne concentrations may be exceeded. General and local exhaust ventilation is the preferred means of protection.

EYE PROTECTION: Use with appropriate eye protection: Goggles or face shield (EU: EN 166-S 3 9).

SKIN PROTECTION: Protective gloves should be worn when the possibility of skin contact exists (EU: EN 374-1:2003).

PROTECTIVE CLOTHING OR EQUIPMENT: Work clothes should be worn and laundered in accordance with current Lead (Pb) standards.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in areas where solder products may be used. Always wash hands after handling soldering products and before applying or using cosmetics/food/drink/tobacco.

OTHER: Maintain eye wash stations in work areas. Avoid the use of contact lenses in high fume areas. Clean protective equipment regularly. Clean up spills immediately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1

APPEARANCE:	Clear, White, or Yellow to Dark Amber gel
ODOR:	Mild odor
ODOR THRESHOLD:	NE
pH as SUPPLIED:	N/A
MELTING POINT:	NE
FREEZING POINT:	NE
INITIAL BOILING POINT:	NE
BOILING RANGE:	NE
FLASH POINT:	NE
EVAPORATION RATE:	NE
FLAMMABILITY (solid):	NE
UPPER/LOWER FLAMMABILITY:	NE
UPPER/LOWER EXPLOSIVE LIMITS:	NE
VAPOR PRESSURE (mmHg):	N/A

VAPOR DENSITY (AIR = 1): N/A
RELATIVE DENSITY: NE
SOLUBILITY IN WATER: Partially
PARTITION COEFFICIENT (n-octanol/water): NE
AUTOIGNITION TEMPERATURE: NE
DECOMPOSITION TEMPERATURE: NE
VISCOSITY: N/A

10. STABILITY AND REACTIVITY

10.1 Reactivity: NE
10.2 STABILITY: Stable
10.3 POSSIBILITY OF HAZARDOUS REACTIONS: NE
10.4 CONDITIONS TO AVOID (STABILITY): NE
10.5 INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizing materials, acids, hydrogen peroxide, bases
10.6 HAZARDOUS DECOMPOSITION/BY-PRODUCTS: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.

11. TOXICOLOGICAL INFORMATION

INHALATION:
This product does not present a risk at ambient temperatures. The flux fumes evolved during soldering will irritate the nose, throat and lungs. Repeated or prolonged exposure to flux fumes may cause an allergic affect which may lead to occupational asthma.

SKIN:
Contact with flux fumes and flux residues may cause irritation and sensitization.

EYES:
Flux fumes may cause irritation.

11.1 ACUTE TOXICITY:

Product/Ingredient Name	Result	Species	Dose	Exposure
Rosin	LD50 Oral	Rat	7600 mg/kg	-
Terpineol	LD50 Oral LD50 Inhalation LD50 Dermal	Rat Rat Rat	2000 mg/kg 4.76 mg/l 2000 mg/kg	- 4 hours -
Maleic acid	LD50 Oral LD50 Inhalation LD 50 Dermal	Rat Rat Rabbit	708 mg/kg 720 mg/m^3 1560 mg//kg	Remarks: Behavioral: Convulsions or effect on seizure threshold. Behavioral: Muscle weakness. Gastrointestinal: Ulceration or bleeding from stomach. 1 hour Remarks: Behavioral: Tremor

SKIN CORRISION/IRRITATION: Not available
SERIOUS EYE DAMAGE/IRRITATION:

Product/Ingredient Name	Result	Species	Score	Exposure	Observation
Maleic acid	Eyes – Severe Irritant	Rabbit	-	2 minutes 1 percent	-

RESPIRATORY OR SKIN SENSITIZATION: NE
GERM CELL MUTAGENICITY: Not available
CARCINOGENICITY:

ACGIH: N/A	**NTP:** N/A	**IARC:** N/A

REPRODUCTIVE TOXICITY: Not available
STOT-SINGLE EXPOSURE:

Product/Ingredient Name	Category	Route of exposure	Target organs
Maleic acid	Category 3	Not applicable	Respiratory tract irritation

STOT-REPEATED EXPOSURE: NE
ASPIRATION HAZARD: NE

12. ECOLOGICAL INFORMATION

12.1 TOXICITY:

Product/Ingredient Name	Result	Species	Exposure
Rosin	Acute LC50 60.3 mg/l Fresh water	Brachydanio rerio (zebra fish)	96 hours
Terpineol	Acute LC50 62.80 mg/l Fresh water Acute LC50 68 mg/l Marine water	Danio rerio (zebra fish) Algae – Pseudokirchneriella subcapitata (green algae)	96 hours 72 hours
Maleic acid	Acute EC50 316200 µg/l Fresh water Acute LC50 5000 µg/l Fresh water	Daphnia - Daphnia magna - Larvae Fish - Pimephales promelas	48 hours 96 hours

PERSISTENCE AND DEGRADIBILITY: NE

BIOACCUMULATIVE POTENTIAL:

Product/Ingredient Name	$LogP_{ow}$	BCF	Potential
Rosin	1.9 to 7.7	-	High
Terpineol			NE
Maleic acid	-1.3	-	Low

MOBILITY IN SOIL: NE
12.5 RESULT OF PBT and vPvB ASSESSMENT: Not applicable
OTHER ADVERSE EFFECTS: NE

13. DISPOSAL CONSIDERATIONS

13.1 WASTE DISPOSAL METHOD: Scrap and waste should be recycled or stored in a dry, sealed container for later disposal. Disposal must be in accordance with Federal, State/Provincial, and Local Regulations.

OTHER PRECAUTIONS: Avoid skin & eye contact, inhalation & ingestion of fumes and material. Wash contaminated clothing before reuse. Keep away from children.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

14.1 UN Number: Not available
14.2 UN Proper Shipping Name: Not available

14.3 TRANSPORT HAZARD CLASSES:
US DOT Hazardous Material Classification: Non-Hazardous
Water Transportation: Non-Hazardous
IATA Hazardous Material Classification: Non-Hazardous
ADR Road Regulations Not regulated
IMDG Sea Regulations Not regulated
ADG Land Transportation Not regulated

14.4 Packaging Group: Not applicable
14.5 Environmental Hazards: None
14.6 Not applicable
14.7 Not applicable

15. REGULATORY INFORMATION

15.1
EU REGULATIONS: Not regulated
U.S. FEDERAL REGULATIONS: Not regulated
STATE REGULATIONS: Not regulated
INTERNATIONAL REGULATIONS: Not regulated
AUSTRALIAN REGULATIONS: Not regulated

15.2 Not applicable

16. OTHER INFORMATION

LEGEND:

ACGIH	American Conference of Governmental Industrial Hygienists
ADG	Australian Dangerous Goods Code
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
BCF	Bioconcentration factor
C.A.S.	Chemical Abstract Service
CLP	Classification, Labeling and Packaging
DOT	Department of Transportation
EC	Effective Concentration
EC Number	European Community Number
EPA	Environmental Protection Agency
GHS	Global Harmonized System
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
LC	Lethal Concentration
LD	Lethal Dose
MEL	Maximum Exposure Limit
NA	Not available
NE	Not established
NIOSH	National Institute for Occupational Safety & Health
NOEC	No observed effective concentration
NOHSC	National Occupational Health and Safety Commission (Australia)
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration

PEL	Permissible Exposure Limit
P_{ow}	Octanol water partition coefficient
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
STOT	Specific target organ toxicity
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
US DOT	United States Department of Transportation
WEL	Workplace Exposure Limit

PREPARATION INFORMATION:
This update supersedes all previously released documents.

DISCLAIMER:
The information and recommendations contained within this publication have been compiled from sources believed to be reliable and to represent the best information available to Chip Quik at the time of issue. No warranty, guarantee, or representation is made by Chip Quik nor does Chip Quik assume any responsibility in connection there within; nor can it be assumed that all acceptable safety measures or other safety measures may not be required under particular or exceptional conditions or circumstances. The data on this Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Safety Data Sheet as a source for hazard information.

Copyright © 1994-2022 Chip Quik® Inc.

CHIPQUIK® Isopropyl Alcohol Wipes

Safety Data Sheet (SDS)

www.chipquik.com

To comply with European CLP Regulation 1272/2008

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME: Isopropyl Alcohol Wipes
SYNONYMS: Isopropyl Alcohol 65-75%
PART NUMBERS: Included in: SMD1(wipes), SMD1NL(wipes), SMD2000(wipes), SMD6000(wipes)

1.2 Relevant identified uses of the substance or mixture and uses advised against
PRODUCT USE: Cleaning flux off circuit boards.

1.3 MANUFACTURER: Chip Quik Inc.
ADDRESS: 3rd Floor, 207 Regent Street, London W1B 3HH (UK and EU)
PHONE: (508) 477-2264
1.4 EMERGENCY PHONE: +44 20 3868 7152 (UK and EU 24/7)

REVISION DATE: 2021/11/22
REVISION NUMBER: EU3.7
REVISED BY: Chip Quik Product Safety

2. HAZARD IDENTIFICATION

2.1 Classified in accordance with European CLP Regulation 1272/2008

Flammable Liquid	2
Serious Eye Damage/Eye Irritation	2

CHEMICAL NAME: 2-propanol
CHEMICAL FAMILY: Isopropyl Alcohol

ROUTES OF ENTRY: Inhalation, Ingestion, Skin/Eye Contact

TARGET ORGANS: NA

2.2 Label Elements:
GHS/CLP LABEL ELEMENTS:

Signal Word: Danger

Hazard statement(s)

H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.

Precautionary statement(s)

P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P264	Wash hands thoroughly after handling.
P305/P351/P338/P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call POISON CENTER/Doctor.
P342/P311	IF EXPERIENCING RESPIRATORY SYMPTOMS: Call POISON CENTER/Doctor.
P370/P378	IN CASE OF FIRE: Use appropriate media for extinction.
P402/P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 2 NOTES:
Chip Quik Inc. does not recommend, manufacture, market, or endorse any of its products for human consumption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Classified in accordance with European CLP Regulation 1272/2008

Hazardous Ingredients	C.A.S. Number	EC Number	Weight Percent	Classification
Isopropyl Alcohol	67-63-0	200-661-7	65-75	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336

Non-Hazardous Ingredients	C.A.S. Number	EC Number	Weight Percent	Classification
Water	7732-18-5	231-791-2	25-35	-

4. FIRST-AID MEASURES

4.1

EYES: Flush with plenty of water, contact a physician. If contact lenses can be removed easily, flush eyes without contact lenses.

SKIN: Wash affected area with plenty of warm, soapy water. If irritation persists, seek medical attention.

INGESTION: Call a physician or Poison Control Center immediately. Do not induce vomiting.

INHALATION: Remove to fresh air. If not breathing, seek immediate medical attention.

4.2 Not available

4.3 Not available

5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA: Dry chemical, foam

5.2 UNUSUAL FIRE AND EXPLOSION HAZARDS: Highly flammable liquid and vapor.

5.3 SPECIAL FIRE FIGHTING PROCEDURES: Do not use water. Use (EU: EN 137:2006) self-contained Breathing Apparatus and full protective clothing if involved in a fire. Avoid inhalation of material or combustion by-products.

6. ACCIDENTAL RELEASE MEASURES

6.2 ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Collect spillage.

6.3 ACCIDENTAL RELEASE MEASURES: If material spills or leaks collect and place it in a plastic or glass jar. Follow on-site personal protective equipment recommendations.

6.4 SECTION 6 NOTES:
See Sections 2, 4, and 7 for additional information.

7. HANDLING AND STORAGE

7.1/7.2 HANDLING/STORAGE: Keep containers tightly closed when not in use. Use care to avoid spills. Avoid inhalation of fumes. Avoid contact with eyes, skin, and clothing. Store in a closed corrosive resistant container, with corrosive resistant liner, in cool dry place. Wear appropriate personal protective equipment when working with or handling. Always wash hands thoroughly after handling this product. Dispose of following Federal, State/Provincial, and Local regulations.

7.3 OTHER PRECAUTIONS: Empty containers may retain product residues in vapor, liquid, and/or solid form. All labeled hazard precautions should be observed.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in work areas. Always wash hands after handling material and before applying or using cosmetics/food/drink/tobacco.

SECTION 7 NOTES:
Keep out of reach of children.
Not for internal consumption.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Occupational Exposure Limit Values:

Isopropyl Alcohol	**67-63-0**
Austria	200 ppm TWA [TMW] (short time value for large casting); 500 mg/m3 TWA [TMW] (short time value for large casting) 800 ppm STEL [KZW] 4 X 15 min; 2000 mg/m3 STEL [KZW] 4 X 15 min; 800 ppm STEL [KZW] (STEL for large casting valid till 12/31/2013) 4 X 30 min; 2000 mg/m3 STEL [KZW] (STEL for large casting valid till 12/31/2013) 4 X 30 min
Belgium	200 ppm TWA; 500 mg/m3 TWA 400 ppm STEL; 1000 mg/m3 STEL
Denmark	200 ppm TWA; 490 mg/m3 TWA
Finland	200 ppm TWA; 500 mg/m3 TWA 250 ppm STEL; 620 mg/m3 STEL
France	400 ppm STEL [VLCT]; 980 mg/m3 STEL [VLCT]
Germany (TRGS)	200 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed) exposure factor 2; 500 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed) exposure factor 2
Germany (DFG)	200 ppm TWA MAK; 500 mg/m3 TWA MAK

	400 ppm Peak; 1000 mg/m3 Peak
Greece	400 ppm TWA; 980 mg/m3 TWA 500 ppm STEL; 1225 mg/m3 STEL
Ireland	200 ppm TWA 400 ppm STEL Potential for cutaneous absorption
Portugal	200 ppm TWA [VLE-MP] 400 ppm STEL [VLE-CD]
Spain	200 ppm TWA [VLA-ED] (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary or biocide compound); 500 mg/m3 TWA [VLA-ED] (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary or biocide compound) 400 ppm STEL [VLA-EC]; 1000 mg/m3 STEL [VLA-EC]
Sweden	150 ppm LLV; 350 mg/m3 LLV 250 ppm STV; 600 mg/m3 STV
United Kingdom	400 ppm TWA; 999 mg/m3 TWA 500 ppm STEL; 1250 mg/m3 STEL

Also see section 3.

8.2 ENGINEERING CONTROLS: Based on available information, additional ventilation is not required. Ensure compliance with applicable exposure limits.

RESPIRATORY PROTECTION: Use with adequate ventilation.

EYE PROTECTION: Use with appropriate safety glasses (EU: EN 166-S).

SKIN PROTECTION: Not required.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in areas where solder products may be used. Always wash hands after handling soldering products and before applying or using cosmetics/food/drink/tobacco.

OTHER: Maintain eye wash stations in work areas. Avoid the use of contact lenses in high fume areas. Clean protective equipment regularly. Clean up spills immediately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1

APPEARANCE:	Non-woven cloth saturated with liquid in foil package
ODOR:	Alcohol
ODOR THRESHOLD:	N/A
pH as SUPPLIED:	N/A
MELTING POINT:	N/A
FREEZING POINT:	-89°C (literature value)
INITIAL BOILING POINT:	+82°C (literature value)
BOILING RANGE:	N/A
FLASH POINT:	12°C (estimated based on isopropyl alcohol)
EVAPORATION RATE:	N/A
FLAMMABILITY (solid):	N/A
UPPER/LOWER FLAMMABILITY:	NE
UPPER/LOWER EXPLOSIVE LIMITS:	12% (V) / 2% (V)
VAPOR PRESSURE (mmHg):	33 mmHg @ 20°C (literature value)
VAPOR DENSITY (AIR = 1):	2.1 (literature value)
SPECIFIC GRAVITY (WATER = 1):	0.7855 @ 20°C (literature value)
RELATIVE DENSITY:	NE
SOLUBILITY IN WATER:	100%
PARTITION COEFFICIENT (n-octanol/water):	0.05 (measured value)
AUTOIGNITION TEMPERATURE:	399°C (literature value)
DECOMPOSITION TEMPERATURE:	N/A
VISCOSITY:	N/A

10. STABILITY AND REACTIVITY

10.1 REACTIVITY:	Not known to occur
10.2 STABILITY:	Stable under normal conditions of use
10.3 POSSIBILITY OF HAZARDOUS REACTIONS:	Hazardous polymerization will not occur
10.4 CONDITIONS TO AVOID (STABILITY):	Avoid direct sunlight
10.5 INCOMPATIBILITY (MATERIAL TO AVOID):	Aldehydes, halogenated compounds, halogens, strong acids, strong oxidizing agents
10.6 HAZARDOUS DECOMPOSITION/BY-PRODUCTS:	Oxides of carbon

11. TOXICOLOGICAL INFORMATION

11.1

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Isopropyl alcohol (67-63-0)

Oral LD50	Rat 5045 mg/kg
Dermal LD50	Rabbit 12800 mg/kg
Inhalation LC50	Rat 1600 ppm 4 h

Irritation/Corrosivity Data
Causes serious eye irritation.

Respiratory Sensitization
No data available

Dermal Sensitization
No data available

Germ Cell Mutagenicity
No data available

Component Carcinogenicity

Isopropyl alcohol	67-63-0
ACGIH	A4 - Not Classifiable as a Human Carcinogen
IARC	Monograph 71 [1999]; Supplement 7 [1987]; Monograph 15 [1977] (Group 3 (not classifiable))

Reproductive toxicity
No data available

Specific Target Organ Toxicity - Single Exposure
No information available

Specific Target Organ Toxicity - Repeated Exposure
No information available

Aspiration hazard
No data available

12. ECOLOGICAL INFORMATION

Avoid release to the environment.

12.1 Component Analysis - Aquatic Toxicity:

Isopropyl Alcohol	67-63-0
Fish	LC50 96 h Pimephales promelas 9640 mg/L [flow-through]; LC50 96 h Pimephales promelas 11130 mg/L [static]; LC50 96 h Lepomis macrochirus >1400000 µg/L
Algae	EC50 96 h Desmodesmus subspicatus >1000 mg/L IUCLID; EC50 72 h Desmodesmus subspicatus >1000 mg/L IUCLID
Invertebrate	EC50 48 h Daphnia magna 13299 mg/L IUCLID

Persistence and degradability N/A
Bioaccumulative potential N/A
Mobility in soil N/A
12.5 Results of PBT and vPvB assessment
EU - Interim Strategy for Management of PBT and vPvB Substances No components of this material are listed.
Other adverse effects No additional information available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE DISPOSAL METHOD: Scrap and waste should be recycled or stored in a dry, sealed container for later disposal. Disposal must be in accordance with Federal, State/Provincial, and Local Regulations.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

14.1 UN Number: Not available
14.2 UN Proper Shipping Name: Not available

14.3 TRANSPORT HAZARD CLASSES:
US DOT Hazardous Material Classification: Non-Hazardous
Water Transportation: Non-Hazardous
IATA Hazardous Material Classification: Non-Hazardous
ADR Road Regulations Not regulated
IMDG Sea Regulations Not regulated
ADG Land Transportation Not regulated

14.4 Packaging Group: Not applicable
14.5 Environmental Hazards: None
14.6 Not applicable
14.7 Not applicable

15. REGULATORY INFORMATION

15.1

INTERNATIONAL REGULATIONS: Not regulated

EU - REACH (1907/2006) - Annex XIV List of Substances Subject to Authorization
No components of this material are listed.
EU - REACH (1907/2006) - Article 59(1) Candidate List of Substances Subject to Authorization
No components of this material are listed.
EU - REACH (1907/2006) - Annex XVII Restrictions of Certain Dangerous Substances, Mixtures and Articles
No components of this material are listed.
EU - Biocides (1451/2007) - Existing Active Substance

Isopropyl Alcohol	67-63-0
	Present

Germany Regulations
Germany Water Classification
Isopropyl alcohol (67-63-0) ID Number 135, hazard class 1 - low hazard to waters
Denmark Regulations
No components of this material are listed.
Chemical Safety Assessment
No chemical safety assessment has been carried out for the substance/mixture.

15.2 NA

16. OTHER INFORMATION

LEGEND:

ACGIH	American Conference of Governmental Industrial Hygienists
ADG	Australian Dangerous Goods Code
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
BCF	Bioconcentration factor
C.A.S.	Chemical Abstract Service
CLP	Classification, Labeling and Packaging
DOT	Department of Transportation
EC	Effective Concentration
EC Number	European Community Number
EPA	Environmental Protection Agency
GHS	Global Harmonized System
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
LC	Lethal Concentration
LD	Lethal Dose
MEL	Maximum Exposure Limit
NA	Not available
NE	Not established
NIOSH	National Institute for Occupational Safety & Health
NOEC	No observed effective concentration
NOHSC	National Occupational Health and Safety Commission (Australia)
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
P_{ow}	Octanol water partition coefficient
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
STOT	Specific target organ toxicity
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA:	Time Weighted Average
US DOT:	United States Department of Transportation

PREPARATION INFORMATION:
This update supersedes all previously released documents.

DISCLAIMER:
The information and recommendations contained within this publication have been compiled from sources believed to be reliable and to represent the best information available to Chip Quik at the time of issue. No warranty, guarantee, or representation is made by Chip Quik nor does Chip Quik assume any responsibility in connection there within; nor can it be assumed that all acceptable safety measures or other safety measures may not be required under particular or exceptional conditions or circumstances. The data on this Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Safety Data Sheet as a source for hazard information.

Copyright © 1994-2021 Chip Quik® Inc.