

## Safety Data Sheet (SDS)

[www.chipquik.com](http://www.chipquik.com)

To comply with European CLP Regulation 1272/2008

### 1. PRODUCT AND COMPANY IDENTIFICATION

**1.1 PRODUCT NAME:** Chip Quik Leaded Solder Wire and Spheres Series: SMD  
**SYNONYMS:** Solder Spool, Solder Sticks, Solder Coil, Chip Quik Alloy, Removal Alloy, Rework Solder, Solder Spheres  
**PART NUMBERS:** SMD1, SMD4.5, SMD8, SMD16, SMD32, SMD32S, SMD2000

**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. This product is for industrial use only.

**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:** 2018/7/19  
**REVISION NUMBER:** EU3.3  
**REVISED BY:** Chip Quik Product Safety

### 2. HAZARD IDENTIFICATION

**2.1** Classified in accordance with European CLP Regulation 1272/2008

Acute Tox.	4*
Skin Irritant	2
Eye Irritant	2A
Aquatic Acute	1
Aquatic Chronic	1
Chronic toxicity	2
Reproductive toxicity	2
Carcinogenic	2

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

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

**TARGET ORGANS:** Blood, Kidneys, Skin, Respiratory System, Nasal, Septum, Liver, Eyes

### 2.2 Label Elements:

#### GHS/CLP LABEL ELEMENTS:



Signal Word: Danger

#### LEAD 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.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

##### 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 (Argyria).

**Bismuth:** May cause foul breath, a blue-black line on the gums, and Stomatitis.

**Indium:** May cause weight loss, pulmonary edema, blood damage and degenerative changes in liver and kidneys.

**CHRONIC / ACUTE HEALTH HAZARDS**

**Lead:** Women of child-bearing age should avoid exposure to lead and its inorganic compounds due to post-natal effects. Lead can cause potential injury to a developing fetus and possible effects on reproduction. Exposure to high levels of airborne or ingested lead may produce symptoms of anemia, weakness, constipation, nausea, and abdominal pain. Prolonged exposure may result in kidney and/or nervous system involvement.

**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.

Chronic Toxicity-Proposition 65, State of California: Warning! This product Contains Lead which may be harmful to your health and is a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Federal and State Laws prohibit the use of lead solder in making joints in any private or public potable (drinking) water supply system. Breathing fumes may cause respiratory system irritation or damage. After handling solder, wash hands with soap and water before eating or smoking.

**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	<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)	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
Lead	7439-92-1	231-100-4	<50	Acute Tox. 4; Carc. 2; Repr. 1A; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302 + H332, H351, H360Df, H373, H410
Tin	7440-31-5	231-141-8	<50	Eye Irrit. 2; STOT SE 3; H319, H335
Bismuth	7440-69-9	231-177-4	<50	-
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 OTHER: Lead:** Excessive overexposure may result in an acute or chronic illness. If symptoms are present, the individual should be immediately removed from exposure and a physician consulted.

#### 4.3 NA

### 5. FIREFIGHTING MEASURES

**5.1 EXTINGUISHING MEDIA:** Dry chemical, foam

**5.2 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.

**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.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Lead oxide fumes and/or Lead particulate may be evolved.

#### SECTION 5 NOTES:

Molten solder alloys consisting of Antimony, Bismuth, Copper, Indium, Lead, 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 ENVIRONMENTAL PRECAUTIONS:** Avoid release to the environment. Collect spillage.

**6.3 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.

#### 6.4 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:

For industrial use only.

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<sup>3</sup> 8h TWA.

MEL: 0.15 mg/m<sup>3</sup> 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

<b>APPEARANCE:</b>	Silver Grey Solid
<b>ODOR:</b>	Odorless
<b>ODOR THRESHOLD:</b>	NE
<b>pH as SUPPLIED:</b>	NA
<b>MELTING POINT:</b>	Varies
<b>FREEZING POINT:</b>	Varies
<b>INITIAL BOILING POINT:</b>	Varies
<b>BOILING RANGE:</b>	NA
<b>FLASH POINT:</b>	NA
<b>EVAPORATION RATE:</b>	NA
<b>FLAMMABILITY (solid):</b>	NE
<b>UPPER/LOWER FLAMMABILITY:</b>	NE
<b>UPPER/LOWER EXPLOSIVE LIMITS:</b>	NE
<b>VAPOR PRESSURE (mmHg):</b>	NA
<b>VAPOR DENSITY (AIR = 1):</b>	NA
<b>RELATIVE DENSITY:</b>	NE
<b>SOLUBILITY IN WATER:</b>	Insoluble
<b>PARTITION COEFFICIENT (n-octanol/water):</b>	NE
<b>AUTOIGNITION TEMPERATURE:</b>	NE
<b>DECOMPOSITION TEMPERATURE:</b>	NE
<b>VISCOSITY:</b>	NA

### SECTION 9 NOTES:

Other physical and chemical properties depend on alloy composition.

## 10. STABILITY AND REACTIVITY

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

## 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	Rat	2000 mg/kg	-
	LD50 Inhalation	Rat	4.76 mg/l	4 hours
	LD50 Dermal	Rat	2000 mg/kg	-
Maleic acid	LD50 Oral	Rat	708 mg/kg	Remarks: Behavioral: Convulsions or effect on seizure threshold. Behavioral: Muscle weakness. Gastrointestinal: Ulceration or bleeding from

	LD50 Inhalation LD 50 Dermal	Rat Rabbit	720 mg/m <sup>3</sup> 1560 mg/kg	stomach. 1 hour Remarks: Behavioral: Tremor
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SKIN CORRISSION/IRRITATION: NE  
 SERIOUS EYE DAMAGE/IRRITATION: Not available  
 RESPIRATORY OR SKIN SENSITIZATION: NE  
 GERM CELL MUTAGENICITY: Not available  
 CARCINOGENICITY:

ACGIH: Lead (Pb)-A3	NTP: NA	IARC: Lead (PB)-Group 2B
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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: Not available

ASPIRATION HAZARD: Not available

#### 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
Lead	Acute EC50 105 ppb Marine water	Algae - Chaetoceros sp. - Exponential growth phase	72 hours
	Acute EC50 0.489 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 8000 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 530 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 4400 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.44 ppm Fresh water	Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.25 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.03 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
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

PERSISTENCE AND DEGRADABILITY: NE

BIOACCUMULATIVE POTENTIAL:

Product/Ingredient Name	LogP <sub>ow</sub>	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**

<b>EU REGULATIONS:</b>	Not regulated
<b>U.S. FEDERAL REGULATIONS:</b>	Not regulated
<b>STATE REGULATIONS:</b>	Not regulated
<b>INTERNATIONAL REGULATIONS:</b>	Not regulated
<b>AUSTRALIAN REGULATIONS:</b>	Not regulated

**15.2** NA

## 16. OTHER INFORMATION

**LEGEND:**

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

## Safety Data Sheet (SDS)

[www.chipquik.com](http://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

**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. This product is for industrial use only.

**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:** 2021/05/06  
**REVISION NUMBER:** EU3.6  
**REVISED BY:** Chip Quik Product Safety

### 2. HAZARD IDENTIFICATION

**2.1** Classified in accordance with European CLP Regulation 1272/2008

Acute Tox. 4  
 Skins Sens. 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.
H334	May cause allergy or asthma symptoms or breathing difficulties 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:

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

For industrial use only.

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<sup>3</sup> 8h TWA.

MEL / WEL: 0.15 mg/m<sup>3</sup> 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

<b>9.1</b>	
<b>APPEARANCE:</b>	Clear, White, or Yellow to Dark Amber gel
<b>ODOR:</b>	Mild odor
<b>ODOR THRESHOLD:</b>	NE
<b>pH as SUPPLIED:</b>	N/A
<b>MELTING POINT:</b>	NE
<b>FREEZING POINT:</b>	NE
<b>INITIAL BOILING POINT:</b>	NE
<b>BOILING RANGE:</b>	NE
<b>FLASH POINT:</b>	NE
<b>EVAPORATION RATE:</b>	NE
<b>FLAMMABILITY (solid):</b>	NE
<b>UPPER/LOWER FLAMMABILITY:</b>	NE
<b>UPPER/LOWER EXPLOSIVE LIMITS:</b>	NE
<b>VAPOR PRESSURE (mmHg):</b>	N/A
<b>VAPOR DENSITY (AIR = 1):</b>	N/A
<b>RELATIVE DENSITY:</b>	NE
<b>SOLUBILITY IN WATER:</b>	Partially
<b>PARTITION COEFFICIENT (n-octanol/water):</b>	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	Rat	2000 mg/kg	-
	LD50 Inhalation	Rat	4.76 mg/l	4 hours
	LD50 Dermal	Rat	2000 mg/kg	-
Maleic acid	LD50 Oral	Rat	708 mg/kg	Remarks: Behavioral: Convulsions or effect on seizure threshold. Behavioral: Muscle weakness. Gastrointestinal: Ulceration or bleeding from stomach. 1 hour Remarks: Behavioral: Tremor
	LD50 Inhalation	Rat	720 mg/m <sup>3</sup>	
	LD 50 Dermal	Rabbit	1560 mg/kg	

**SKIN CORRIOSION/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
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**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	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

**PERSISTENCE AND DEGRADIBILITY:** NE

**BIOACCUMULATIVE POTENTIAL:**

Product/Ingredient Name	LogP <sub>ow</sub>	BCF	Potential
Rosin	1.9 to 7.7	-	High
Terpineol			NE

Maleic acid	-1.3	-	Low
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**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<sub>ow</sub>** Octanol water partition coefficient  
**SDS** Safety Data Sheet  
**STEL** Short-Term Exposure Limit

<b>STOT</b>	Specific target organ toxicity
<b>TLV</b>	Threshold Limit Value
<b>TSCA</b>	Toxic Substance Control Act
<b>TWA</b>	Time Weighted Average
<b>US DOT</b>	United States Department of Transportation
<b>WEL</b>	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.

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## Safety Data Sheet (SDS)

[www.chipquik.com](http://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. This product is for industrial use only.

**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:** 2017/9/7  
**REVISION NUMBER:** EU3.1  
**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:

For industrial use only.

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/m <sup>3</sup> TWA [TMW] (short time value for large casting) 800 ppm STEL [KZW] 4 X 15 min; 2000 mg/m <sup>3</sup> 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/m <sup>3</sup> STEL [KZW] (STEL for large casting valid till 12/31/2013) 4 X 30 min
Belgium	200 ppm TWA; 500 mg/m <sup>3</sup> TWA 400 ppm STEL; 1000 mg/m <sup>3</sup> STEL
Denmark	200 ppm TWA; 490 mg/m <sup>3</sup> TWA
Finland	200 ppm TWA; 500 mg/m <sup>3</sup> TWA 250 ppm STEL; 620 mg/m <sup>3</sup> STEL
France	400 ppm STEL [VLCT]; 980 mg/m <sup>3</sup> 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/m <sup>3</sup> 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/m <sup>3</sup> TWA MAK 400 ppm Peak; 1000 mg/m <sup>3</sup> Peak
Greece	400 ppm TWA; 980 mg/m <sup>3</sup> TWA 500 ppm STEL; 1225 mg/m <sup>3</sup> 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/m <sup>3</sup> 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/m <sup>3</sup> STEL [VLA-EC]
Sweden	150 ppm LLV; 350 mg/m <sup>3</sup> LLV 250 ppm STV; 600 mg/m <sup>3</sup> STV
United Kingdom	400 ppm TWA; 999 mg/m <sup>3</sup> TWA 500 ppm STEL; 1250 mg/m <sup>3</sup> 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

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

## 10. STABILITY AND REACTIVITY

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

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

**PREPARATION INFORMATION:**

This update supersedes all previously released documents.

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