

## Safety Data Sheet (SDS)

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To comply with European CLP Regulation 1272/2008, US 29CFR 1910.1200 OSHA's Hazard Communication Standard, and Australian NOHSC: 1008 [2004] and ADG Code 7.4

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Chip Quik Tacky Flux Series: SMD291, SMD291NL, SMD4300, SMDLT, RMA591, RMA591NL, SMD491  
**SYNONYMS:** Tack Flux, Gel Flux, Paste Flux  
**PART NUMBERS:** SMD191, SMD191\_3CC, SMD291, SMD291\_3CC, SMD29130CC, SMD2915CC, SMD291NL, 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

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**REVISION DATE:** 2019/12/3  
**REVISION NUMBER:** 3.8  
**REVISED BY:** Chip Quik Product Safety

**PRODUCT USE:** Bonding solder joints in production and repair of circuit boards. This product is for industrial use only.

### 2. HAZARD IDENTIFICATION

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

**GHS/CLP:**



Signal Word: Warning

#### GHS/CLP LABEL ELEMENTS:

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.

**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**

Classified in accordance with European CLP Regulation 1272/2008

Hazardous Ingredients <sup>(1)</sup>	C.A.S. Number	Weight Percent	OSHA PEL mg/m <sup>3</sup>	ACGIH TLV TWA mg/m <sup>3</sup>	LD 50 Ingested g/Kg	LD 50 Inhaled g/m <sup>3</sup>
Modified Rosins (Rosin) <sup>(2)</sup>	8050-09-7	<45	NE	NE	NE	NE
Pine Oil Derivatives (Terpineol)	8000-41-7	<5	NE	NE	NE	NE
Mixed Carboxylic Acids (Maleic Acid) <sup>(2)</sup>	110-16-7	<4	NE	NE	NE	NE

Non-Hazardous Ingredients	C.A.S. Number	Weight Percent	OSHA PEL mg/m <sup>3</sup>	ACGIH TLV TWA mg/m <sup>3</sup>	LD 50 Ingested g/Kg	LD 50 Inhaled g/m <sup>3</sup>
Surfactants	NA	<4	NE	NE	NE	NE
Rheological Modifier	NA	<5	NE	NE	NE	NE
Solubilizer	NA	<37	NE	NE	NE	NE

**SECTION 3 NOTES:**

(1) Per 29 CFR 1910 the mixture has not been tested as a whole. All hazardous components, which comprise 1% of the mixture (0.1% carcinogenic), are listed. Percentages of individual components are not listed as this information is considered a trade secret.

(2) The identity of the specific chemical(s) is being withheld as a trade secret per 29 CFR 1910.1200. The hazardous properties of these ingredients are disclosed in this SDS.

**4. FIRST-AID MEASURES**

**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.

**5. FIREFIGHTING MEASURES**

**EXTINGUISHING MEDIA:** Dry chemical, foam

**SPECIAL FIRE FIGHTING PROCEDURES:** Do not use water. Use NIOSH-approved self-contained Breathing Apparatus and full protective clothing if involved in a fire.

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

## 6. ACCIDENTAL RELEASE MEASURES

**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.

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

### SECTION 6 NOTES:

See Sections 2, 4, and 7 for additional information.

## 7. HANDLING AND STORAGE

**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.

**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

### 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.

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

**VENTILATION:** Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLVs.

**RESPIRATORY PROTECTION:** A (US: NIOSH; 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 (US: OSHA).

**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>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

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

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

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.

**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 LD 50 Dermal	Rat Rabbit	720 mg/m <sup>3</sup> 1560 mg/kg	

**SKIN CORRISSION/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:**

OSHA: N/A	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

**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 DEGRADABILITY:** NE

**BIOACCUMULATIVE POTENTIAL:**

Product/Ingredient Name	LogP <sub>ow</sub>	BCF	Potential
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Rosin	1.9 to 7.7	-	High
Terpineol			NE
Maleic acid	-1.3	-	Low

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

### 13. DISPOSAL CONSIDERATIONS

**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.

**UN Number:** Not available  
**UN Proper Shipping Name:** Not available  
**Packaging Group:** Not applicable  
**Environmental Hazards:** None

### 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

### 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.

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

### 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  
**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  
**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  
**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.

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