



Material Safety Data Sheet Shunt Regulator – TL431

1. Supplier Material

Product name:	Shunt Regulator.
Part number:	TL431
Supplier:	SIRECTIFIER ELECTRONIC CO., LTD.
Tel:	+886-2-2698-3658
Fax:	+886-2-2698-3656

2. Composition/ Information On Ingredients

Material name:	Schottky Barrier Diode
Main material harmful ingredient:	Not applicable
CAS No. :	As below
Content %:	As below

Chemistry type:		
Ingredient name	CAS No.	Concentration (Content %).
Cu	7740-50-8	46.16390
Ti	13463-67-7	0.00769
P	7723-14-0	0.00829
Ag	7440-22-4	0.11697
Si	7440-21-3	0.96982
V	7440-62-2	0.12355
Sn	7440-31-35	0.01688
Ni	7440-02-0	0.05714
Al	7429-90-5	0.12345
Epoxy	29690-82-2	52.41231

3. Hazard Identification

Most important harmful effects:
▲ Health danger effect: Not applicable.
▲ Ingestion: Not applicable.
▲ Skin contact: Not applicable.
▲ Eye contact: Not applicable.
▲ Environmental effect: If spilled, clean and scrap under government regulation.
▲ Physical and chemical hazards: Not applicable.
▲ Special hazards: Not applicable.

4. Health Hazards and Emergency/ First-Aid Procedure

▲ Breath protection: Remove to fresh air. Get medical attention for any breathing difficulty.
▲ Skin contact: Wash exposed skin with plenty of soap water.
▲ Eye contact: Wash thoroughly with running water. Get medical help.
▲ Ingestion: Unless ingested in large amounts, no first aid is needed.
▲ Most important harmful effect: Don't ventilation and wear goggles and mask.
▲ Protection for first-aid personnel: Dust hazard.
▲ To prompt doctor: Not applicable.

5. Fire Fighting Procedure

▲ Suitable fire extinguisher: Normal foam extinguisher or water.
▲ When fire fighting, possible hazard: Heavy smoke.
▲ Special fire fighting procedure: Wear self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

▲ Matters needing individual's special attention: No available data.
▲ Environmental matters needing attention: Store it well under good condition, there is no particular environmental hazard.
▲ Cleaning up method: Sweep the floor, if spilled.

7. Safe Handling and Storage Method

▲ Handling: Mask or dust respirator (avoid inhalation of powder).
▲ Storage: Store in warehouse and keep at 0 ~ 70°C
▲ Expiration: 3 years

8. Exposure Controls/ Personal Protection

Project control: Install ventilation blower.
Individual prevention: ▲ Breath protection: Ordinary Mask. ▲ Hand protection: Clothes glove ▲ Eye protection: Goggles ▲ Skin and body protection: Wear protective gloves and clean body-covering clothing.
Health measure: No information available.

9. Physical and Chemical Properties

State of matter: Solid	Shape: Tablets.
Color: Black	Smell: Not applicable.
pH value: Not applicable.	Boiling point/ boiling point scope: Not applicable.
Decomposition temperature: No information.	Dodges the fire point: No information Test method: No data.
Natural temperature: No information.	Detonation boundary: No data.
Steams the barometric pressure: No data.	Vapor density: No data.
Density: Not applicable.	Solubility: Not applicable.

10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.
Under the special condition possibly harms responded: Hazardous polymerization will not occur.
Conditions to avoid: Heat, flame, ignition sources, dust and incompatibles.
Materials to avoid: Addition of amine under uncontrolled condition.
Harm resolvent: HBr(>380°C), Complete combustion will emit carbon dioxide and water when heated to decomposition. Incomplete combustion gives in addition carbon monoxide and oxidation products, including phenols and aldehydes.

11. Toxicological Information

Anxious toxicity: Not applicable.
Local effect: No available data.
Sends the sensitivity: No available data.
Slow toxicity or long-term toxicity: Not applicable.
Special effect: No available data.

12. Ecological Information

The possible environmental effect/ environment to disseminate: This product can not be disposed directly into the sewage system.
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13. Disposal Method

Disposal method: Follow government regulations.

14. Transportation Information

International shipping stipulations: Not particular.
The United Nations numbers: Not applicable.
Domestic shipping stipulations: Not applicable.
Special shipping method and matters that need attention: Not applicable

15. Ships the Material

Is suitable the laws and regulations: TSCA: (Toxic substances control act) The ingredients of product are on the 8(b) inventory list. EINECS: (European inventory of existing commercial substance) This product complies with the provision of the European inventory.

16. Others

Reference	Not applicable.
Scheduling unit	Name: SIRECTIFIER ELECTRONIC CO., LTD.
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Scheduling person	Ernest Lee
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