

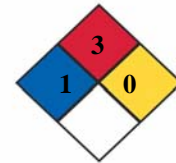


MATERIAL SAFETY DATA SHEET

Personal Protective Equipment			WHMIS Pictograms		GHS Pictograms	DOT Pictograms
Chemical Splash Goggles	Safety Glasses	Protective Gloves	Flammable	D2B Toxic	Flammable liquid & vapor	Flammable Liquid
SECTION 1 – IDENTIFICATION						

Product Name: Flux 66.001
Product Code: 66.001
Manufacturer Number: 66.001
Product Use/Restriction: Soldering Flux
Manufacturer: Winslow Automation, Inc.
Address: 905 Montague Expwy, Milpitas, CA 95035
Information Telephone: (408) 262-9004
Customer Service Phone: (408) 956-0100
INFOTRAC: For emergencies in the United States, call INFOTRAC (800) 535-5053. Outside of the United States, call 001-352-323-3500.
MSDS Creation Date: March 10, 1999
MSDS Revision Date: June 15, 2010
MSDS Format: GHS
GHS Class: Flammable liquid and vapor

NFPA



HMIS

Health Hazard	1
Fire Hazard	3
Reactivity	0
Personal Protection	x

* Chronic Health Effects

SECTION 2 – HAZARD(S) IDENTIFICATION

Emergency Overview DANGER! Flammable. Severe Irritant. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

Route of Exposure: Eyes. Skin. Inhalation. Ingestion.

Eye: Eye contact may cause severe irritation, redness, tearing, and blurred vision. Smoke during soldering can cause eye irritation.

Skin: Causes severe skin irritation. May cause permanent skin damage.

Inhalation: Inhalation of vapors, fumes or mists of the product causes severe respiratory system irritation.

Ingestion: Harmful if swallowed. Ingestion can cause nausea, vomiting, diarrhea and gastrointestinal irritation.

Chronic Health Effects: Prolonged skin contact causes burns.
Repeated or prolonged inhalation may cause toxic effects.

Signs/Symptoms: Overexposure can cause headaches, dizziness, nausea, and vomiting.

Target Organs: Eyes. Skin. Respiratory system. Digestive system.

Aggravation of Pre-Existing May aggravate pre-existing respiratory disorders, allergy, eczema, or skin



MATERIAL SAFETY DATA SHEET

Conditions: conditions.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	C.A.S. Number	Ingredient % by weight	OSHA PEL	ACGIH TLV
Ethylene glycol	107-21-1	30-60	50 ppm	N/A
Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	1-5	N.E.	N.E.
Proprietary ingredient(s)	Proprietary	30-60	N.E.	N.E.
Propyl Alcohol (N-propanol)	71-23-8	5-10	200 ppm	250 ppm
Non-Hazardous	N/A	5-10	N.E.	
2-[(2-aminoethyl)amino]ethanol	111-41-1	5-10	N.E.	N.E.
2-amino-2-methyl-1-propanol	124-68-5	1-5	N.E.	N.E.

SECTION 4 – FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with water for at least 15 to 20 minutes. Get medical attention if irritation develops or persists.
Skin Contact:	Immediately wash skin with soap and water. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point :	22°C, (72°F)
Auto-Ignition Temperature:	413°C, (775°F)
Flammable Limits (in air):	LEL 2.1%, UEL 13.5%
Extinguishing Media:	Use alcohol-resistant foam, carbon dioxide, dry chemical, or water fog or spray when fighting fires involving this material.
Unsuitable Media:	Do not use a solid water stream as it may scatter and spread fire.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.
Hazardous Combustion Byproducts:	Oxides of carbon, oxides of nitrogen, Aliphatic Aldehydes, and other organic substances.
NFPA Ratings:	
NFPA Health:	1
NFPA Flammability:	3
NFPA Reactivity:	0



MATERIAL SAFETY DATA SHEET

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area. Avoid breathing vapor, aerosol, or mist. Avoid contact with skin, eyes, and clothing.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Methods for Containment:	Contain spills with an inert absorbent material such as soil, sand or oil dry.
Methods for Cleanup:	Remove all sources of ignition. Absorb spill with inert material (e.g., dry sand or earth) then place in a chemical waste container. Provide ventilation. Collect spill with a non-sparking tool. Place in a suitable container for disposal.

SECTION 7 – HANDLING AND STORAGE

Handling:	Use with adequate ventilation. Avoid breathing vapor and fumes. Use only in accordance with directions. To reduce potential for static discharge, bond and ground containers when transferring material.
Storage:	Store in a cool, dry, well-ventilated area away from sources of heat, combustible materials, direct sunlight, and incompatible substances. Keep container tightly closed when not in use.
Special Handling Procedures:	DANGER! Rags, steel wool and waste soaked with this product may spontaneously catch fire if improperly discarded or stored. To avoid spontaneous combustion fire, immediately after use place place rags, steel wool or waste in a sealed, water-filled metal container.
Hygiene Practices:	Wash thoroughly after handling. Avoid inhaling vapors, mists, or fumes.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective, wear suitable personal protective equipment which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Wear tightly fitting safety goggles. Use face shield when splash hazard exists.
Hand Protection:	Wear appropriate protective gloves. Nitrile rubber or natural rubber gloves are recommended. Consult manufacturers' information for permeability data.



MATERIAL SAFETY DATA SHEET

Respiratory Protection: A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Other Protective: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

EXPOSURE GUIDELINES

Ethylene Glycol:

Guideline ACGIH: TLV-Ceiling/Peak: 100mg/m³

Propyl Alcohol:

Guideline ACGIH: TLV-TWA: 100 ppm

SECTION 9 – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical State Appearance:	Liquid
Color:	Amber
Odor:	Alcohol-like
Boiling Point (@ 760 mm Hg):	99°C, (210°F)
Melting Point:	Not Determined
Density (g /cm³):	1.154 @ 20°C, (68°F)
Vapor Pressure (mm Hg):	15 @ 20°C (68°F)
pH (10% Solution):	4.0 @ 20°C (68°F)
Flash Point :	22°C, (72°F)
Auto-Ignition Temperature:	413°C, (775°F)

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Keep away from heat, ignition sources and incompatible materials.
Incompatible Materials:	Oxidizing Agents, Strong Acids and Bases
Special Decomposition Products:	When heated to soldering temperatures, solvents are evaporated and organic materials may be thermally degraded to liberate aliphatic aldehydes and acids.



MATERIAL SAFETY DATA SHEET

SECTION 11 - TOXICOLOGICAL INFORMATION

Ethylene Glycol:

RTECS Number: KW2975000

Eye: Eye – Rabbit TDLo: 10 pph [Sense Organs and Special Senses (Eye) – conjunctive irritation]
Eye – Rabbit Standard Draize test: 500 mg/24H
Eye – Rabbit Standard Draize test: 100 mg/1H
Eye – Rabbit Standard Draize test: 0.012 mg/3D
Eye – Rabbit Standard Draize test: 1440 mg/6H (RTECS)

Skin: Administration onto the skin – Rabbit Open Irritation test: 555 mg
Administration onto the skin – Rabbit LD50: 9530 uL/kg [Details of toxic effects not reported other than lethal dose value.]

Ingestion: Oral – Mouse LD50: 5500 mg/kg [Details of toxic effects not reported other than lethal dose value.]
Oral – Rat LD50: 4700 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched:

RTECS Number: RB2451000

Propyl Alcohol:

RTECS Number: UH8225000

Eye: Eye – Rabbit Standard Draize test: 20 mg/24H (RTECS)

Skin: Administration onto the skin – Rabbit Open Irritation test: 500 mg
Administration onto the skin – Human Standard Draize test: 100%/47H
Administration onto the skin – Human Standard Draize test: 100%/24H
Administration onto the skin – Rabbit LD50: 5040 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

Inhalation: Inhalation. – Mouse LC50: 48 gm/m³ [Details of toxic effects not reported other than lethal dose value.]
Inhalation. – Mouse LC50: 48000 mg/ m³ [Behavioral – general anesthetic Lungs, Thorax or Respiration – other changes] (RTECS)



MATERIAL SAFETY DATA SHEET

Ingestion: Oral – Rat LD50:1870 mg/kg [Details of toxic effects not reported other than lethal dose value.]
Oral – Mouse LD50:6800 mg/kg [Details of toxic effects not reported other than lethal dose value.]
Oral – Rat LD50: 2200 mg/kg [Behavioral – general anesthetic] (RTECS)

Non Hazardous:

RTECS Number: ZC0110000
Ingestion: Oral – Rat LD50: >90 mL/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

2-[(2-aminoethyl)amino]-ethanol:

RTECS Number: KJ6300000
Eye: Eye – Rabbit Standard Draize test: 50 mg [severe] (RTECS)
Skin: Administration onto the skin – Rabbit Open Irritation test: 10 mg/24H
Administration onto the skin – Rabbit Open Irritation test: 445 mg [mild]
Administration onto the skin – Rabbit LD50: 3560 uL/kg [Details of toxic effects not reported other than lethal dose value.]
Administration onto the skin – Guinea Pig LD50: 1800 uL/kg [Details of toxic effects not reported other than lethal dose value.]
Administration onto the skin – Rat LD50: 2250 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

Ingestion: Oral – Rat LD50:3 gm/kg [Details of toxic effects not reported other than lethal dose value.]
Oral – Mouse LD50: 3550 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

2-amino-2-methyl-1-propanol:

RTECS Number: UA5950000
Ingestion: Oral – Rat LD50: 2900 mg/kg [Details of toxic effects not reported other than lethal dose value.]
Oral – Mouse LD50: 2150 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: No ecotoxicity data was found for this product.
Environmental Fate: No environmental information found for this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance with the EPA and/or state and local guidelines.

SECTION 14 – TRANSPORT INFORMATION



MATERIAL SAFETY DATA SHEET

DOT Shipping Name:	n-Propanol, mixture
DOT UN Number:	UN1274
DOT Hazard Class:	3
DOT Packing Group:	II
IATA Shipping Name:	n-Propanol, mixture
IATA UN Number:::	UN1274
IATA Hazard Class:	3
IATA Packing Group:	II
IMDG Shipping Name:	n-Propanol, mixture
IMDG UN Number:	UN1274
IMDG Hazard Class:	3
IMDG Packing Group:	II
RID Shipping Name:	n-Propanol, mixture
RID UN Number:	UN1274
RID Hazard Class:	3
RID Packing Group:	II

SECTION 15 – REGULATORY INFORMATION

Canada Reg. Status: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations, and the MSDS contains all of the information required by the Controlled Products Regulations.

Canada WHMIS: Controlled – Class: B2 Flammable Liquid
Controlled – Class: D2B Toxic

Ethylene Glycol:

TSCA Inventory Status: Listed

Canada DSL: Listed

Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched:

TSCA Inventory Status: Listed

Canada DSL: Listed

Propyl Alcohol:

TSCA Inventory Status: Listed

Canada DSL: Listed

Non Hazardous:

TSCA Inventory Status: Listed

Canada DSL: Listed

2-[(2-aminoethyl)amino]ethanol:

TSCA Inventory Status: Listed

Canada DSL: Listed

2-amino-2-methyl-1-propanol:

TSCA Inventory Status: Listed

Canada DSL: Listed

WHIMS Pictograms



MATERIAL SAFETY DATA SHEET



SECTION 16 – ADDITIONAL INFORMATION

General Use:	Soldering Flux
HMIS Health Hazard	1
HMIS Fire Hazard:	3
HMIS Reactivity:	0
HMIS Personal Protection:	x
MSDS Creation Date:	March 10, 1999
MSDS Revision Date:	June 15, 2010

Disclaimer:

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. This information is supplied in accordance with OSHA Hazard Communication Standard (29CFR1910.1200). Users are advised to ensure that this information is brought to the attention of the employees, agents, or contractors handling this product. Distributors of this product are advised to forward this document, or the information contained herein, to their purchasers. Winslow Automation, Inc., extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material 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 the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.