



## MATERIAL SAFETY DATA SHEET

Timing and Frequency Products

Base Model numbers: X72; SA.22c; LPRO; SLPRO; XPRO;

LN72; SALN; SA.31m; SA.33m; SA.35m

SDA Group numbers: 8123; 8130; 8200

Issue Date: June 26, 2008

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION						
<b>Product Type</b>		<b>CAS #</b>		<b>Molecular Weight</b>		
This MSDS Applies to: timing or frequency reference products containing Rubidium with the following Base Model numbers: X72; SA.22c; LPRO; SLPRO; XPRO; LN72; SALN; SA.31m; SA.33m; SA.35m and SDA Group numbers: 8123; 8130; 8200		7440-17-7		85.47		
<b>Manufacturer</b>		<b>Address</b>		<b>Phone</b>		
Symmetricom Inc.		34 Tozer Road Beverly, MA 01915		(978) 927-8220		
II. COMPOSITION INFORMATION AND INGREDIENTS						
<b>Hazardous Components</b>	<b>%</b>	<b>OSHA/PEL</b>	<b>ACGIA/TLV</b>	<b>TSCA</b>	<b>Sec 313</b>	
Rubidium	0-100%	Not Listed	Not Listed	Listed	Not Listed	
<b>Boiling Point</b>	<b>Specific Gravity</b>	<b>Solubility in H<sub>2</sub>O</b>	<b>Appearance and Odor</b>	<b>Melting Point</b>	<b>Vapor Pressure</b>	<b>% Volatile</b>
688°C; 1270°F	1.532 g/cc	Reacts Violently with Water	Silver-White Solid; no odor	39°C; 102°F	No Data	No Data
III. FIRE AND EXPLOSION HAZARDS DATA						
<b>Flash Point</b>		<b>Explosive Limits</b>		<b>Autoignition Temperature</b>		
N/A		Upper: N/A Lower: N/A		No Data		
<b>Extinguishing Media:</b> Class D metal fire agent, dry salt or sand. ***DO NOT USE WATER***						
<b>Additional Fire and Explosion Hazards:</b> Pyrophoric material. Contact with water releases explosive hydrogen. May ignite spontaneously on contact with air.						
IV. HEALTH HAZARD INFORMATION						
<b>Effects of Exposure</b>						
<p>Devices covered under this MSDS contain minimal amounts of Rubidium. The Rubidium containing components are sealed in a glass chamber within the internal components of the device. The risk of exposure to rubidium is minimal, due to the design and intended use of each device and the amount of rubidium contained within each product. This section outlines the potential effects of exposure should exposure to Rubidium occur.</p> <p>The toxicological effects of Rubidium have not been fully researched. The human body tends to concentrate Rubidium in the body's electrolytic fluid. The ions are not known to be particularly toxic, and are relatively quickly removed in the sweat and urine. It has been indicated that overexposure could potentially lead to muscle and red blood cell accumulation with possible neuromuscular effects, hyper irritability and muscle spasms.</p> <p>Rubidium reacts with moisture readily to form rubidium hydroxide which is highly corrosive to tissue. Rubidium hydroxide is acutely destructive to tissues. Contact with the eyes may result in permanent damage and complete or partial vision loss. Inhalation may damage the respiratory tract; effects may include: inflammation, edema, chemical pneumonitis, coughing, wheezing, laryngitis, shortness of breath, headache nausea and vomiting. Exposure to skin may result in severe burns or irritation.</p>						



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<b>Acute Effects</b>	
<b>Skin</b>	May cause severe thermal burns, corrosion and ulceration of the skin may occur with direct contact.
<b>Eye</b>	May cause severe thermal burns, corrosion and ulceration of the eye may occur with direct contact.
<b>Ingestion</b>	Not a likely mode of entry; may cause burns and perforations of gastrointestinal tract.
<b>Inhalation</b>	Not a likely mode of entry; may cause inflammation, edema, chemical pneumonitis, coughing, wheezing, laryngitis, shortness of breath, headache nausea and vomiting
<b>Chronic Effects</b>	
No information available on long-term chronic effects	
<b>Intraperitoneal:</b>	LD50: 1200 mg/kg
<b>Carcinogenicity:</b>	NTP: No      IARC: No      OSHA: No
<b>Emergency and First Aid Procedures</b>	
<b>Inhalation</b>	Remove affected person(s) to fresh air and seek medical attention should coughing, shortness of breath or symptoms of irritation persist.
<b>Ingestion</b>	Seek medical attention immediately. Keep victim calm and give them water (only if conscious). Only induce vomiting if directed by medical personnel
<b>Skin</b>	Wash the affected area with soap and water for at least 15 minutes
<b>Eyes</b>	Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.
<b>V. REACTIVITY DATA</b>	
Stability:	Moisture sensitive; Pyrophoric
Conditions to Avoid	Contact with water and air
Incompatibility	Water, alcohols, oxidizers, oxygen, carbon dioxide, halogens, halocarbons, acid.
Hazard Decomposition Products	Flammable hydrogen with moisture, caustic oxide with air
Hazard Polymerization	No hazardous polymerization
<b>VI. SPILL OR LEAK PROCEDURE</b>	
<b>Steps to be taken should rubidium be released from article:</b> Do not handle with bare skin. Do not use water, alcohol or other incompatible chemicals during the clean up. Personnel should leave immediate area. Clean up should be conducted by personnel with knowledge, experience and training in the proper handling and disposal of rubidium.	
<b>Waste Disposal Method:</b> Should be disposed of in accordance with all local, state and federal regulations.	
<b>VII. SPECIAL PROTECTION INFORMATION</b>	
No personal protective equipment is required when product is in used for intended purposes. Should rubidium be released from a broken device, appropriate protective equipment such as rubber gloves and eye glasses should be worn by trained personnel handling the leak.	
<b>VIII. Disposal</b>	
Disposal shall be in accordance to Federal, State, and Local regulations	
<b>IX. TRANSPORTATION:</b>	
All Symmetricom's rubidium product can be shipped both domestically and internationally as a non-hazardous product. Symmetricom has received letters of interpretation from both the United States Department of Transportation (US DOT) Ref. No. 08-0154 and the International Air Transport Association(IATA) stating that Symmetricom's rubidium product are not considered a hazardous Class 4 material in transportation.	