MATERIAL SAFETY DATA SHEET

International Calibration Standard: ICS-R2 ("DCHA-Rho")

Section I. PRODUCT AND SUPPLIERS	
Supplier's Name 1. ASBC 2. Labor Veritas	**Emergency Telephone Nos.** 1. USA: (+1) 651 454 7250 **or** 2. Switzerland: (+41) (0) 44 283 29 30
Address 1. ASBC, 3340 Pilot Knob Road, St. Paul, MN 55121-2097, USA **or** 2. Labor Veritas, Engimattstrasse 11, Postfach 353, CH-8027 Zürich, Switzerland	
Product Name ICS-R2	**Synonyms** DCHA-Rho; Rho Standard
CAS No(s). Not available	**Empirical Formula** Contains mainly $C_{32}H_{53}NO_5$ & $C_{33}H_{55}NO_5$
Chemical Family Isomerized hop resin acid	**Molecular Weight** Mainly 534 & 546 daltons

Section II. COMPOSITION	
Material or components	**%**
A purified, semi-crystalline preparation of *cis-rho*-iso-α-acids in dicyclohexylamine ("DCHA") salt form. Derived via borohydride reduction of CO_2 extracted and isomerized α-acids of hops Mostly contains co-, n- and ad- homologs.	98% DCHA salts of *cis-rho*-iso-α-acids (DCHA content: approx. 34%)

Section III. PHYSICAL DATA	
Boiling Point ºC (°F.) Not applicable	**Solubility in Water** Slightly soluble; soluble at pH 8 -11
Melting Point ºC (°F.) 183-185°C (361-365°F)	**Solubility in Alcohol** Soluble
Vapor Pressure (mm Hg.) Not applicable	**Specific Gravity (H_2O = 1)** Not applicable
Vapor Density (AIR =1) Not applicable	**Volatiles by volume (%)** Not applicable
	Evaporation Rate (Ether =1) Not applicable
Appearance and Odor A white, virtually odorless, semi-crystalline powder.	

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Section IV. FIRE AND EXPLOSION HAZARD DATA			
Flash Point (Method used) Not applicable	**Flammable Limits** Not applicable	**Le**[1]	**Ue**[f]
Extinguishing Media Water, CO_2 , Foam, Dry Powder			
Specific Fire Fighting Procedures None required.			
Unusual Fire and Explosion Hazards None known			

Section V. HEALTH HAZARD DATA
Important Note This product is intended for use only as an HPLC calibration standard! DO NOT add to food, water or beer that may be tasted or consumed by humans!
Threshold Limit Value None known
Effects of Exposure No data available. May be toxic; possible carcinogen. Oral Ingestion: Not known; ingestion of large amounts is probably dangerous. Eye Contact: Believed to be irritant; may cause corneal inflammation. Skin Contact: Prolonged contact may possibly cause dermatitis in some individuals. Respiratory Tract: Probably irritant or corrosive.
Emergency and First Aid Procedures Eye contact: Wash with copious amounts of water; seek medical attention. Skin contact: Remove with warm soapy water.

Section VI. SPILL OR LEAK PROCEDURES
Scoop or vacuum material into disposal container. Clean area with disposable cloth, warm water and detergent to remove final traces.

Section VII. SPECIAL PROTECTION & PRECAUTION INFORMATION

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Respiratory Protection (Specify type) Simple dust mask recommended. Avoid raising dust.	
Ventilation Normally, none required.	
Protective Gloves Laboratory grade, flexible latex or vinyl gloves recommended.	**Eye Protection** Protective goggles or safety glasses recommended.
Other Protective Equipment Use of low-grade protective clothing (e.g. laboratory coat) recommended.	
Precautions Taken in Handling and Storing Store in freezer in original container. Protect from moisture. Minimum storage temperature: -20ºC (-4ºF) Maximum storage temperature (to retain as a standard): -10ºC (14ºF) Maximum storage temperature (for safety purposes only): 30°C (86°F)	

Disclaimer

The information given in this MSDS is believed correct and is supplied in good faith but without warranty of any kind. It should be used only as a supplement to information already in your possession concerning this product and its use. The determination of whether and under what conditions you or your employees should handle and use the product is yours to make.

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