November 29, 2002

CARVEDILOL: MATERIAL SAFETY DATA SHEET

SECTION 1 : CHEMICAL IDENTIFICATION

NAME: CARVEDILOL

SECTION 2. : COMPOSITION/INFORMATION ON INGREDIENTS

CAS #: 72956-09-3

MF: $C_{24}H_{26}N_2O_4$

SYNONYMS:

CARVEDILOL

SECTION 3. : HAZARDS IDENTIFICATION

HEALTH HAZARDS:

SKIN CONTACT: NOT EXPECTED TO OCCUR DURING NORMAL HANDLING OF THIS PRODUCT. ALLERGIC REACTION WITH ITCHING, REDNESS OR SWELLING, WHICH MAY BE IMMEDIATED OR DELAYED, MIGHT OCCUR FOLLOWING REPEATED, DIRECT CONACT.

EYE CONTACT: NOT EXPECTED TO OCCUR DURING NORMAL HANDLING OF THIS PROUDUCT. IRRITATION IS NOT EXPECTED FOLLOWING DIRECT CONTACT. HOWEVER, EYE CONTACT SHOULD BE AVOIDED.

ENVIORNMENTAL HAZARDS:

SUMMARY: NO INFORMATION IS AVAILABLE ABOUT THE POTENTIAL OF THIS MATERIAL PRODUCE ADVERSE ENVIRONMENTAL EFFECTS. LOCAL REGULATIONS AND PROCEDURES SHOULD BE COSULTED PRIOR TO ENVIRONMENTAL RELEASE.

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SECTION 4. : ***FIRST-AID MEASURES***

SKIN CONTACT: IN THE EVENT OF OCCUPATIONAL SKIN CONTACT, WASH CONTAMINATED AREA THOROUGHLY.

EYE CONTACT: FLUSH EYES CONTINUOUSLY WITH WATER FOR AT LEAST 15 MINUTES. DO NOT USE A CHEMICAL NEUTRALISER. OBTAIN MEDICAL ASSISTANCE IF SYMPTOMS OCCUR.

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

INGESTION: IN THE EVENT OF OCCUPATIONAL INGESTION, SEEK MEDICAL ADVICE. INDUCTION OF VOMITTING IS NOT A RECOMMENDED FIRST-AID PROCEDRE.

NOTES TO PHYSICIAN: NONE. MEDICAL TREATMENT IN CASES OF OVEREXPOSURE SHOULD BE TREATED AS AN OVERDOSAGE OF BETA-ADRENERGIC BLOCKERS. REFER TO CURRENT PRESCRIBING INFORMATION OR TO LOCAL POISON CONTROL INFORMATION CENTRES.

ANTIDOTES: THE DECISION AS TO WHETHER THE SEVERITY OF POISONING REQUIRES ADMINISTRATION OF ANY ANTIDOTE AND ACTUAL DOSE REQUIRED SHOULD BE MADE BY QUALIFIED MEDICAL PERSONNEL. ADRENALINE, NORADRENALINE OR BETA-SYMPATHOMIMETICS HAVE BEEN RECOMMENDED FOR TREATMENT OF SELECTED SYMPTOMS IN CASE OF OVERDOSAGE.

SECTION 5. : **FIRE FIGHTING MEASURES**

FIRE AND EXPLOSION HAZARDS: NOT EXPECTED FOR THE PRODUCT, ALTHOUGH THE PACKAGING IS COMBUSTIBLE

FIRE CONTROL: THIS MATERIAL IS NON-COMBUSTIBLE. WATER IS RECOMMENDED FOR FIRES INVOLVING PACKAGING.

SPECIAL FIREFIGHTING PROCEDURES: FOR SINGLE UNITS (PACKAGES): NO SPECIAL REQUIREMENTS NEEDED. FOR LARGER AMOUNTS (MULTIPLE PACKAGES/PALLETS) OF PRODUCT: SINCE TOXIC, CORROSIVE OR FLAMMABLE VAPOURS MIGHT BE EVOLVED FROM FIRES INVOLVING THIS MATERIAL AND ASSOCIATED PACKAGING, SELF CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE EQUIPMENT ARE RECOMMENDED FOR FIREFIGHTERS. IF POSSIBLE, CONTAIN AND COLLECT FIREFIGHTING WATER FOR LATER DISPOSAL.

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SECTION 6. : ACCIDENTAL RELEASE MEASURES

SPILLS: NO SPECIAL REQUIREMENTS FOR SPILLS FROM SINGLE CONTAINERS. FOR LARGE SPILLS, TAKE PRECAUTION TO PREVENT ENTRY INTO WATERWAYS, SEWERS, OR SURFACE DRAINAGE SYSTEM. USE PROTECTIVE CLOTHING DURING CLEAN-UP PRIOR TO DISPOSAL OF SPILLED MATERIAL.

DECONTAMINATION: WATER CAN BE USED FOR CLEAN-UP AND DECONTAMINATION OPERATIONS. NO SPECIFIC DECONTAMINATION OR DETOXIFICATION PROCEDURE HAVE BEEN IDENTIFIED FOR THIS SUBSTANCE.

SECTION 7. : HANDLING AND STORAGE

KEEP IN A TIGHTLY CLOSED CONTAINER. PROTECT FROM PHYSICAL DAMAGE. STORE IN A COOL, DRY VENTILATED AREA AWAY FROM SOURCES OF HEAT, IGNITION SOURCES AND INCOMPATIBILITIES.

SECTION 8. : EXPOSURE CONTROLS / PERSONAL PROTECTION

CARVEDILOL

SB HAZARD CATEGORY:	3
SB PERSONAL EXPOSURE LIMIT:	30 MCG/M3 8 HR TWA SENSITISER
ALLOWABLE DAILY LIMIT:	0.3 MG/DAY
OCCUPATIONAL HEGIENE METHOD:	PS-S4B.-S&AM-1128

PERSONAL PROTECTIVE EQUIPMENT

OTHER EQUIPMENT OR PROCEDURES	WASH HANDS AND ARMS THOROUGHLY AFTER HANDLING. NONE REQUIRED FOR NORMAL HANDLING.

SECTION 9. : PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

PHYSICAL FORM: SOLID.

PHYSICAL PROPERTIES

MELTING POINT: 113 TO 116°C.

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SECTION 10.: STABILITY AND REACTIVITY

CONDITIONS TO AVOID: AVOID CONTACT WITH WATER AND AIR.

SECTION 11.: TOXICOLOGICAL INFORMATION

ORAL TOXICITY: LOW ORAL TOXICITY BASED ON EXTENSIVE USE IN HUMANS.

INHALATION TOXICITY: NO STUDIES HAVE BEEN CONDUCTED.

SKIN TOXICITY: IRRITATION IS NOT EXPECTED BASED ON EFFECTS OF INDIVIDUAL COMPONENTS.

EYE EFFECTS: IRRITATION IS NOT EXPECTED BASED ON EFFECTS OF INDIVIDUAL COMPONENTS.

SENSITISATION: SENSITISATION (ALLERGIC SKIN REACTION) MIGHT OCCUR, BASED ON EFFECTS OF INDIVIDUAL COMPONENTS.

CARCINOGENICITY: NO COMPONENTS ARE LISTED AS CARCINOGENS BY SB, IARC, NTP OR US OSHA.

SECTION 12.: ECOLOGICAL INFORMATION

SUMMARY: NO INFORMATION IS AVAILABLE ABOUT THE POTENTIAL OF THIS MATERIAL TO PRODUCE ADVERSE ENVIRONMENTAL EFFECTS. LOCAL REGULATIONS AND PROCEUDRES SHOULD BE CONSULTED PRIOR TO ENVIRONMENTAL RELEASE.

SECTION 13.: DISPOSAL CONSIDERATIONS

DISPOSAL RECOMMENDATIONS: COLLECT FOR RECYCLING OR RECOVERY IF POSSIBLE. IN ADDITION, ALLCURRENT LOCAL AND NATIONAL REQUIREMENTS MUST BE OBSERVED WHEN DISPOSING OF THIS MATERIAL. THE DISPOSAL METHOD FOR REJECTED PRODUCTS/RETURNED GOODS MUST ENSURE THAT THEY CANNOT BE RESOLD OR REUSED.

SECTION 14.: TRANSPORT INFORMATION

THE MSDS SHOULD ACCOMPANY ALL SHIPMENTS FOR REFERENCE IN THE EVENT OF SPILLAGE OR ACCIDENTAL RELEASE. CONTACT USV LIMITED FOR TRANSPORTATION INFORMATION.

SECTION 15. REGULATORY INFORMATION

DATA NOT AVAILABLE.

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SECTION 16. OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. USV LIMITED SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

For USV LIMITED

Dr. S. V. Joshi
Principal Scientist