

**MATERIAL SAFETY DATA SHEET**

**PRODUCT IDENTIFICATION**

PRODUCT: **GLYCERINE** HMIS CODES: H F R  
PRODUCT CODE: **N2000G/N2001G/GRK**  
MANUFACTURER: DOW CHEMICAL  
ADDRESS: MIDLAND, MI 48674  
INFORMATION: 517-636-4400 EMERGENCY: CHEMTREC 800-424-9300  
DATE: 5/2003 PREPARER: R. Madariaga  
DISTRIBUTOR: **NATIONAL REFRIGERATION PRODUCTS**  
**2900 SAMUEL DRIVE · BENSLEM, PA 19020-7306**  
**1-800-352-6951**

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**PRODUCT COMPOSITION INFORMATION**

**GLYCERINE:** MINIMUM CAS# 000056-81-5 99.7%

THIS DOCUMENT IS PREPARED PURSUANT TO THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200). IN ADDITION, OTHER SUBSTANCES NOT 'HAZARDOUS' PER THIS OSHA STANDARD MAY BE LISTED. WHERE PROPRIETARY INGREDIENT SHOWS, THE IDENTITY MAY BE MADE AVAILABLE AS PROVIDED IN THIS STANDARD.

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**HAZARDS IDENTIFICATION**

<b>EXPOSURE LIMITS:</b>	<b>OSHA PEL/TWA</b>	<b>ACGIH TLV/TWA</b>
<b>GLYCERIN:</b>	10 mg/m3 TOTAL 5 mg/m3 RESPIRABLE	10mg/m3

**POTENTIAL HEALTH EFFECTS:**

**EYE:** MAY CAUSE SLIGHT TRANSIENT (TEMPORARY) EYE IRRITATION. CORNEAL INJURY IS UNLIKELY.

**SKIN CONTACT:** PROLONGED OR REPREATED EXPOSURE NOT LIKELY TO CAUSE SIGNIFICANT SKIN IRRITATION. A SINGLE PROLONGED EXPOSURE IS NOT LIKELY TO RESULT IN THE MATERIAL BEING ABSORBED THROUGH SKIN ON HARMFUL AMOUNTS. THE LD50 FOR SKIN ABSORPTION IN RABBITS IS >10,000 mg/kg. REPEATED EXPOSURES MAY CAUSE FLAKING AND SOFTENING OF SKIN. MAY BE ABSORBED IN POTENTIALLY HARMFUL AMOUNTS WHEN APPLIED IN LARGE QUANTITIES TO SEVERE BURNS (SECOND OR THIRD DEGREE) OVER LARGE AREAS OF THE BODY AS PART OF A CREAM OR OTHER TOPICAL APPLICATION. ABSORPTION UNDER SUCH CIRCUMSTANCES CAN ELEVATE SERUM OSMOLALITY AND MAY RESULT IN OSOMOTIC SHOCK.

**INGESTION:** SINGLE DOSE ORAL TOXICITY IS LOW. THE ORAL LD50 FOR RATS IS 17,000 TO 27,200 mg/kg. SMALL AMOUNTS SWALLOWED INCIDENTAL TO NORMAL HANDLING OPERATIONS ARE NOT LIKELY TO CAUSE INJURY; SWALLOWING AMOUNTS LARGER THAN THAT MAY CAUSE INJURY. SIGNS AND SYMPTOMS OF EXCESSIVE EXPOSURE MAY BE CENTRAL NERVOUS SYSTEM EFFECTS AND INCREASED BLOOD SUGAR LEVELS.

**INHALATION:** AT ROOM TEMPERATURE, VAPORS ARE MINIMAL DUE TO PHYSICAL PROPERTIES. IF HEATED OR SPRAYED AS AND AEROSOL, AIRBORNE MATERIAL MAY CAUSE UPPER RESPIRATORY IRRITATION. THE LC50 FOR 6 HOURS IN RATS WAS > 4mg/LITER.

**SYSTEMIC (OTHER TARGET ORGAN):** REPEATED EXCESSIVE EXPOSURES MAY CAUSE INCREASED FAT LEVELS IN BLOOD. OBSERVATIONS IN ANIMALS INCLUDE KIDNEY, LIVER, AND GASTROINTESTINAL EFFECTS WITH VERY LARGE ORAL DOSES.

**CANCER INFORMATION:** DID NOT CAUSE CANCER IN LONG-TERM ANIMAL STUDIES.

**DEVELOPMENTAL/REPRODUCTIVE:** BIRTH DEFECTS ARE UNLIKELY. EXPOSURES HAVING NO ADVERSE EFFECTS ON THE MOTHER SHOULD HAVE NO EFFECT ON THE FETUS. REPRODUCTIVE EFFECTS SEEN IN FEMALE ANIMALS ARE BELIEVED TO BE DUE TO ALTERED NUTRITIONAL STATUS RESULTING FROM EXTREMELY HIGH DOSES IN THEIR DIETS. SIMILAR EFFECTS HAVE BEEN SEEN IN ANIMALS FED SYNTHETIC DIETS.

**MUTAGENICITY:** IN VITRO MUTAGENICITY STUDIES WERE NEGATIVE.

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## ENVIRONMENTAL AND DISPOSAL INFORMATION

**ACTION TO TAKE FOR SPILLS/LEAKS:** SMALL SPILLS: COVER WITH ABSORBENT MATERIAL SOAK UP AND SWEEP INTO A DRUM. LARGE SPILLS: DIKE AROUND SPILL AND PUMP INTO SUITABLE CONTAINERS.

**DISPOSAL METHOD:** REPROCESS OR INCINERATE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.

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## FIRST AID MEASURES

**EYES:** FLUSH EYES WITH PLENTY OF WATER.

**SKIN:** WASH OFF IN FLOWING WATER OR SHOWER.

**INHALATION:** REMOVE TO FRESH AIR IF EFFECTS OCCUR.

**INGESTION:** INDUCE VOMITING IF LARGE AMOUNTS ARE INGESTED. CONSULT MEDICAL PERSONNEL.

**NOTICE TO PHYSICIANS:** NO SPECIFIC ANTIDOTE. SUPPORTIVE CARE. TREATMENT BASED ON JUDGEMENT OF THE PHYSICIAN IN RESPINSE TO REACTIONS OF THE PATIENT.

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## FIRE AND EXPLOSION INFORMATION

**FLASH POINT:** 390 F, 199 C      **METHOD USED:** PMCC

**FLAMMABLE LIMITS:** LFL: NOT DETERMINED, UFL: NOT DETERMINED

**EXTINGUISHING MEDIA:** WATER FOG, ALCOHOL-RESISTANT FOAM, CO2 AND DRY CHEMICAL.

**HAZARDOUS DECOMPOSITION PRODUCTS:** TOXIC FUMES OF CARBON DIOXIDE AND CARBON MONOXIDE.

**FIRE AND EXPLOSION HAZARDS:** AUTOIGNITION TEMPERATURE 698 F, 370 C.

**FIRE-FIGHTING EQUIPMENT:** WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS.

## HANDLING PRECAUTIONS

**ENGINEERING CONTROLS:** PROVIDE GENERAL AND /OR LOCAL EXHAUST VENTILATION TO CONTROL AIRBORNE LEVELS BELOW THE EXPOSURE GUIDELINES.

**PERSONAL PROTECTION EQUIPMENT:**

**EYE/FACE PROTECTION:** USE SAFETY GLASSES.

**SKIN PROTECTION:** NO PRECAUTIONS OTHER THAN CLEAN BODY-COVERING CLOTHING SHOULD BE NEEDED.

**RESPIRATORY PROTECTION:** FOR MOST CONDITIONS, NO RESPIRATORY PROTECTION SHOULD BE NEEDED; HOWEVER, IF MATERIAL IS HEATED OR SPRAYED, USE AN APPROVED AIR-PURIFYING RESPIRATOR.

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## PHYSICAL DATA

<b>BOILING POINT:</b>	554 F, 290 C
<b>VAPOR PRESSURE:</b>	<1.0 mmHg @ 20 C
<b>VAPOR DENSITY:</b>	3.1
<b>SOL. IN WATER:</b>	MISCIBLE
<b>SPECIFIC GRAVITY:</b>	1.2607 @ 25/25 (MIN)
<b>APPEARANCE:</b>	WATER WHITE LIQUID
<b>ODOR:</b>	ODORLESS

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## REACTIVITY DATA

**STABILITY (CONDITIONS TO AVOID):** AVOID STRONG OXIDIZING AGENT (SUCH AS SODIUM HYPOCHLORITE, HYPOCHLOROUS ACID).

**HAZARDOUS DECOMPOSITION PRODUCTS:** ACROLEIN.

**HAZARDOUS POLYMERIZATION:** WILL NOT OCCUR.

**INCOMPATIBILITY (SPECIFIC MATERIALS TO AVOID):** OXIDIZING MATERIAL.

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## REGULATORY INFORMATION

(NOT MEANT TO BE ALL INCLUSIVE---SELECTED REGULATIONS REPRESENTED.)

**NOTICE:** THE INFORMATION HEREIN IS PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE AS OF THE EFFECTIVE DATE SHOWN ABOVE. HOWEVER, NO WARRANTY, EXPRESSED OR IMPLIED, IS GIVEN. REGULATORY REQUIREMENTS ARE SUBJECT TO CHANGE AND MAY DIFFER FROM ONE LOCATION TO ANOTHER; IT IS THE BUYER'S RESPONSIBILITY TO ENSURE THAT ITS ACTIVITIES COMPLY WITH FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS. THE FOLLOWING SPECIFIC INFORMATION IS MADE FOR THE PURPOSE OF COMPLYING WITH NUMEROUS FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS AND REGULATIONS.

**U.S. REGULATIONS:**

**SARA HAZARD CATEGORY:** THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA "HAZARD CATEGORIES" PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:  
NOT TO HAVE MET AND HAZARD CATEGORY

**CANADIAN REGULATIONS:**

**WHMIS INFORMATION:** THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION FOR THIS PRODUCT IS:  
THIS PRODUCT IS NOT A "CONTROLLED PRODUCT" UNDER WHMIS.

CANADIAN TDG INFORMATION: FOR GUIDANCE, THE TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION FOR THIS PRODT IS:  
FOR TDG REGULATORY INFORMATION, IF REQUIRED, COKNSULT TRANSPORTATION REQUATIONS, PRODUCT SHIPPING PAPERS,OR YOUR DOW REPRESENTATIVE.

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**ADDITIONAL INFORMATION**

**SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**  
PRACTICE REASONABLE CARE AND CAUTION.

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**DISCLAIMER**

INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BELIEVED TO BE ACCURATE AT THE TIME OF PREPARATION. NO WARRANTY IS MADE CONCERNING THE ACCURACY AND NO LIABILITY SHALL BE MADE FOR CLAIMS FOR USE OR RELIANCE OF THE RECOMMENDATIONS CONTAINED HEREIN.