



MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL IDENTIFICATION

PRODUCT NAME: X-GAL IN N,N,N-DIMETHYLFORMAMIDE (DMF)
COMMON NAME: X-GAL SOLUTION IN DMF
RPI CATALOG #: B71825
SUPPLIER' NAME: Research Products International Corp.
SUPPLIER'S ADDRESS: 410 North Business Center Drive
Mount Prospect, IL 60056
EMERGENCY CONTACT: 1-800-424-9300
OTHER INFORMATION: 847-635-7330

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS #: 68-12-2
EINECS #: 200-679-5
MOLECULAR FORMULA: C_3H_7NO

SECTION 3 - HAZARDS IDENTIFICATION

Label precautionary statements: Toxic. May cause harm to the unborn child. Harmful by inhalation and in contact with skin. Irritating to eyes and skin. Combustible. Readily absorbed through skin. Target organ(s): liver, kidneys. Teratogen. Combustible liquid. In case of accident or if you feel unwell, seek medical advice. Immediately (show the label where possible). Wear suitable protective clothing, gloves and eye/face protection. Do not breathe vapor.

SECTION 4 - FIRST-AID MEASURES

Harmful if swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician. In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

SECTION 5 - FIRE FIGHTING MEASURES

Extinguishing media: carbon dioxide, dry chemical powder or appropriate foam.

Special fire fighting procedures: wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosions hazards: emits toxic fumes under fire conditions.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Wear disposable coveralls and discard them after use. Cover with dry lime or soda ash, pick up, keep in a closed container and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete. Evacuate area.

SECTION 7 - HANDLING AND STORAGE

Refer to section 8.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Use only in a chemical fume hood. Safety shower and eye bath. Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. NIOSH/MSHA-approved respirator. Compatible chemical-resistant gloves. Chemical safety goggles. Wash thoroughly after handling. Wash contaminated clothing before reuse. Discard contaminated shoes. Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical properties: Boiling point:153°C; Melting point:-61°C; Flashpoint:136°F

Explosion limits in air: Upper (15.2%); Lower (2.2%); Auto ignition temperature: 833°F; Vapor pressure: 2.7mm 20°C; Specific gravity: 0.944; Vapor density: 2.5

SECTION 10 - STABILITY AND REACTIVITY

Stability: stable. Incompatibilities: strong oxidizing agents. Hazardous combustion or decomposition products: thermal decomposition may produce carbon monoxide, carbon dioxide and nitrogen oxides. Hazardous polymerization: will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute effects: Causes skin irritation. Harmful if absorbed through skin. Readily absorbed through skin. Causes eye irritation. Harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if swallowed. WARNING: intolerance for alcohol can occur up to 4 days after dimethylformamide exposure. N,N-dimethylformamide is considered to be a potent liver toxin. Exposure can cause: stomach pains, vomiting, diarrhea. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Chronic effects: This product is or contains a component that is not classifiable as to its carcinogenicity based on ITS IARC, ACGIH, NTP OR EPA classification. May cause congenital malformation in the fetus. Target organ(s): liver, kidneys, central nervous system, cardiovascular system, blood. RTECS #: Iq2100000

Irritation data:

SKN-HMN 100%/24H MLD BJIMAG 13,51,1956; EYE-RBT 100 MG RINSE SE DCTODJ 9,147,1986

Toxicity data

ORL-RAT LD ₅₀ :2800 MG/KG	ZEKBAI 69,103,1967	IMS-MUS LD ₅₀ :3900 MG/KG	ARZNAD 15,618,1965
IPR-RAT LD ₅₀ :1400 MG/KG	BJIMAG 13,51,1956	IVN-DOG LD ₅₀ :470 MG/KG	ARZNAD 15,618,1965
SCU-RAT LD ₅₀ :3800 MG/KG	ARZNAD 15,618,1965	IPR-CAT LD ₅₀ :500 MG/KG	BJIMAG 13,51,1956
IVN-RAT LD ₅₀ :2 GM/KG	ZEKBAI 69,103,1967	ORL-RBT LD ₅₀ :5 GM/KG	NTIS** OTS0520699
UNR-RAT LD ₅₀ :>3 GM/KG	ARZNAD 18,645,1968	SKN-RBT LD ₅₀ :4720 MG/KG	AIHAAP 30,470,1969
ORL-MUS LD ₅₀ :2900 MG/KG	NTIS** OTS0521148	IPR-RBT LD ₅₀ :1 GM/KG	BJIMAG 13,51,1956
IHL-MUS LC ₅₀ :9400 MG/M3/2H	TPKVAL 1,54,1961	IVN-RBT LD ₅₀ :1800 MG/KG	ARZNAD 15,618,1965
IPR-MUS LD ₅₀ :650 MG/KG	CNCRA6 30,9,1963	IVN-GPG LD ₅₀ :1050 MG/KG	ARZNAD 15,618,1965
SCU-MUS LD ₅₀ :4500 MG/KG	ARZNAD 15,618,1965	IVN-MUS LD ₅₀ :2500 MG/KG	ARZNAD 15,618,1965

Target organ data behavioral (somnia, muscle weakness); liver (other changes); kidney, ureter, bladder (other changes in urine composition); endocrine (effect on menstrual cycle); blood (changes in cell count); paternal effects (spermatogenesis); maternal effects (other effects on female); effects on fertility (post-implantation mortality); effects on embryo or fetus (extra embryonic structures); effects on embryo or fetus (fetotoxicity); specific developmental abnormalities (body wall, musculoskeletal system, gastrointestinal system); nutritional and gross metabolic (weight loss or decreased weight gain). Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 - DISPOSAL CONSIDERATIONS

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations.

SECTION 14 - TRANSPORT INFORMATION

Non regulated.

SECTION 15 - REGULATORY INFORMATION

European information: Toxic. R 61, may cause harm to the unborn child. R 20/21, harmful by inhalation and in contact with skin. R 36, irritating to eyes. S 45, in case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

U.S. information: This product is subject to SARA section 313 reporting requirements.

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. Research Products International Corp. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.