



MATERIALS SAFETY DATA

MAXIDRIVE®

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name: JOHNSON HI-TECH (AUSTRALIA) PTY LTD
Address: 103 Great Eastern Highway, Rivervale, WA, AUSTRALIA, 6103
Telephone: +61 8 6250 8200
Fax: +61 8 6250 8299
Emergency: 1800 014 100
Synonym(s): MAXIDRIVE® • MAXIDRIVE PLUS®
Use(s): BLASTING AGENT • EXPLOSIVE • MINING INDUSTRY
MSDS Date: 11 Jan 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA.

RISK PHRASES

R3: Extreme risk of explosion by shock, friction, fire or other sources of ignition.

R45: May cause cancer.

SAFETY PHRASES

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

S53: Avoid exposure - obtain special instructions before use.

S7/8: Keep container tightly closed and dry.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE.

UN No: 0241

DG Class: 1.1D

Subsidiary Risk(s): None Allocated

Packing Group: None Allocated

Hazchem Code: E

EPG: None Allocated

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
ALUMINIUM	Al	7429-90-5	<5%
AMMONIUM NITRATE	H3-N.H-N-O3	6484-52-2	85-90%
SODIUM NITRATE	Na-N-O3	7631-99-4	10-18%
PLASTIC	Not Available	Not Available	<10%
DISTILLATES (PETROLEUM), CHEMICALLY NEUTRALIZED LIGHT NAPHTHENIC	Not Available	64742-35-4	<3%

4. FIRST AID MEASURES

EYE: Exposure is considered unlikely unless casing is damaged. Flush gently with running water. Seek medical attention if irritation develops.

SKIN: Exposure is considered unlikely unless casing is damaged. Gently flush affected areas with water and seek medical attention if irritation develops.

INHALATION: Due to product form / nature of use, an inhalation hazard is not anticipated.

INGESTION: For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

ADVICE TO DOCTOR: Treat symptomatically as for exposure to nitrates. Excessive exposure could lead to methaemoglobinaemia. Nitrates can have a smooth muscle relaxant effect which can result in hypertension.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION: Evacuate area and contact emergency services. Exposure to heat may result in detonation, however effects are expected to be limited to the package. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Do not attempt to fight fire if other explosives are present. Use waterfog to cool unexploded cartridges.

EXTINGUISHING: DO NOT attempt to extinguish burning explosives. Evacuate area immediately. Notify trained emergency response personnel.

FLAMMABILITY: EXPLOSIVE. Will explode under specific conditions. May evolve toxic gases (carbon/ nitrogen oxides, hydrocarbons) when heated to decomposition. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights etc. when handling. **CAUTION:** Will explode if exposed to heat or with heavy impact.

HAZCHEM CODE: E

6. ACCIDENTAL RELEASE MEASURES

SPILLAGE: If spilt (bulk), evacuate area and contact emergency services immediately. Contain spillage, then collect and place in suitable containers for disposal. Eliminate all ignition sources. Prevent spill entering drains or waterways.

7. STORAGE AND HANDLING

STORAGE: Store in clean, well ventilated and dry magazine licensed for Class 1 Explosives. Segregate from all other reagents including sunlight, specific incompatibilities, combustibles (including wooden pallets) and foodstuffs. Ensure magazines are adequately labelled and protected from physical damage/shock or friction.

HANDLING: Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

EXPOSURE STDS:

Ingredient	Reference	TWA		STEL	
		ppm	mg/m3	ppm	mg/m3
Aluminium (metal dust)	ASCC (AUS)	--	10	--	--

BIOLOGICAL LIMITS: No biological limit allocated.

ENGINEERING CONTROLS: Avoid inhalation. Use in well ventilated areas. Maintain vapour levels below the recommended exposure standard.

PPE: Wear rubber or PVC gloves, coveralls and safety glasses. If entering poorly ventilated or confined areas shortly after explosions wear self contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: GREY EMULSION (ENCLOSED IN PLASTIC)

SOLUBILITY (WATER): SLIGHTLY SOLUBLE

ODOUR: ODOURLESS

SPECIFIC GRAVITY: 0.95 to 1.25

pH: NOT AVAILABLE

% VOLATILES: 0 %

VAPOUR PRESSURE: NOT AVAILABLE

FLAMMABILITY: EXPLOSIVE

VAPOUR DENSITY: NOT AVAILABLE

FLASH POINT: NOT AVAILABLE

BOILING POINT: NOT AVAILABLE

UPPER EXPLOSION LIMIT: NOT AVAILABLE

MELTING POINT: > 120°C

LOWER EXPLOSION LIMIT: NOT AVAILABLE

EVAPORATION RATE: NOT AVAILABLE

DECOMPOSITION TEMPERATURE: NOT AVAILABLE

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended conditions of storage.

CONDITIONS TO AVOID: Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

MATERIAL TO AVOID: May detonate if heated strongly or exposed to severe shock. Due to enclosed form, reaction with other materials is unlikely, however avoid contact with acids (eg. nitric acid), metal powders, combustibles and oxidisers. Also incompatible with alkalis (eg. hydroxides).

HAZARDOUS DECOMPOSITION PRODUCTS: May evolve toxic gases (carbon/ nitrogen oxides, hydrocarbons) when heated to decomposition.

HAZARDOUS REACTIONS: Polymerization is not expected to occur.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARD SUMMARY: Low toxicity - Highly reactive explosive. When detonated or heated to decomposition, this product will evolve highly toxic gases. Symptoms of exposure may include shortness of breath, chest pain, asphyxia, methaemoglobinaemia, and pulmonary oedema. Symptoms may be delayed several hours. Chronic over exposure to decomposition products may result in blood or respiratory disease. **WARNING:** May explode with shock, heat or friction. Product form (encased) reduces potential for exposure. Distillates (petroleum), chemically neutralized light naphthenic [Unrefined or mildly refined baseoil] is classified as carcinogenic to humans (IARC Group 1).

EYE: Due to product form, exposure can only occur during detonation. Serious eye damage may result from explosive fragments.

INHALATION: Irritant - toxic. Over exposure may result in irritation of the nose and throat, coughing, chest pain, breathing difficulties and pulmonary oedema. Due to product encapsulation, an inhalation hazard is not anticipated. Effects may be delayed.

SKIN: Product encapsulation minimises skin contact potential, however contact with contents may cause irritation and skin redness.

INGESTION: Low to moderate toxicity. Ingestion may result in gastrointestinal irritation, nausea, vomiting, abdominal pain and diarrhoea. Ingestion may result in cyanosis (blue-grey skin discolouration) and methaemoglobinaemia (reduced capacity of haemoglobin to transport oxygen). Due to product form, ingestion is considered unlikely.

TOXICITY DATA:

AMMONIUM NITRATE (6484-52-2)
LD50 (Ingestion): 2217 mg/kg (rat)

SODIUM NITRATE (7631-99-4)
LD50 (Ingestion): 1276 mg/kg (rat)
LDLo (Ingestion): 22.5 mg/kg (child)
LDLo (Intraperitoneal): > 181 mg/kg (rat)
TDLo (Ingestion): 14 mg/kg (woman)

12. ECOLOGICAL INFORMATION

ENVIRONMENT: Ammonium nitrate is a nutrient in water. Spills can cause massive algal blooms in static waters and affect local species population balance in the aquatic environment. If water is used to disperse ammonium nitrate spilled on soil, the solution produced can end up in the groundwater. Ammonium nitrate will be taken up by bacteria. Nitrate is more persistent in water than the ammonium ion.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Do not dispose of this product. Small quantities of damaged or deteriorated material may be destroyed by inclusion in a blast hole containing good explosives (licensed personnel). Detonators should not be inserted into defective explosives. For larger amounts contact the manufacturer for additional information.

LEGISLATION: Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

TRANSPORT: AIR TRANSPORT PROHIBITED under the international Air Transport Association (IATA) Dangerous Goods Regulations for transport by air passenger aircraft and cargo aircraft.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping Name : EXPLOSIVE, BLASTING, TYPE E

UN No: 0241

DG Class: 1.1D

Subsidiary Risk(s): None Allocated

Packing Group: None Allocated

Hazchem Code: E

EPG: None Allocated

IATA

Shipping Name: None Allocated

UN No: None Allocated

DG Class: None Allocated

Subsidiary Risk(s): None Allocated

Packing Group: None Allocated

IMDG

Shipping Name: EXPLOSIVE, BLASTING, TYPE E

UN No: 0241

DG Class: 1.1D

Subsidiary Risk(s): None Allocated

Packing Group: None Allocated



JOHNEX
explosives

PRODUCT DISCLAIMER: The information contained in this technical bulletin is believed to be accurate, but can not possibly cover every application or variation of conditions under which the product is used or tested. The specifications here in are based on the manufacturer's experiences, research and testing. Johnson Hi-Tech (Australia) Pty Ltd trading as Johnex Explosives can not anticipate or control conditions under which this information and it's products may be used. Each user is responsible for being aware of the details in the technical bulletin and the product applications in the specific context of the intended use. Johnson Hi-Tech (Australia) Pty Ltd will not be responsible for damages of any nature resulting from the use or reliance upon the information. No express or implied warranties are given other than those implied as mandatory by Commonwealth, State or Territory legislation.

Maxidrive® a Chemrok Pty Ltd trademark is used under licence by Australian Explosives Pty Ltd.

15. REGULATORY INFORMATION

POISON SCHEDULE: A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS: All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

EXPLOSIVES & BLASTING AGENTS: Refer to Local State and Federal legislation that specifically relates to the use of Explosives. Users of products described in this MSDS report are advised to ensure familiarity and compliance with the appropriate legal requirements (eg. Regulations) prior to the use of this product. Where any further information is required, users may contact their local authority in Explosives and Dangerous Goods.

EXPLOSIONS: Fires involving explosives or explosive mixtures may undergo further explosions and rapid propagation. Police and emergency personnel should be notified immediately. Evacuate individuals to a safe sheltered area at least 800 metres away. If possible remove vehicles and further heat and ignition sources from the area. Do not return to areas until at least one hour after fire and explosions have ceased.

EXPLOSIONS: For further information please refer to Australian Standard 1216, for classification of explosives and Local and Federal Explosive and Dangerous Goods legislation (Act and Regulations).

EXPLOSIVES - BURNING SAFETY: (Note: disposal in a blast with fresh explosives may be preferable to burning).

- (a) Make a sawdust (or newspaper) trail 450mm wide and approx 20mm deep in the direction of the wind. The trail should be 2m longer than necessary.
- (b) Place the cartridges on the sawdust (or paper), they may be touching, but not piled on top of each other
- (c) Individual trails should be no closer than 2m and should not contain more than 12kgs of explosives.
- (d) Trails should be side by side, not in a line. No more than 4 should be set up at one time.
- (e) Remove explosives not being burnt, to at least 300m away, unless the material can be stored behind something substantial.
- (f) Thoroughly wet the trail with kerosene or diesel (never petrol or any other highly flammable liquid). Use at least 2L of fuel per 10m of trail.
- (g) Light the trail from a long rolled paper wick, place down wind and contact the 2m of trail which is not covered by explosives. The flame should blow away from the unburned explosives otherwise preheating and detonation may occur.
- (g) Use a plastic igniter if available instead of paper. Coil one end into the sawdust or under the paper and light the other end from a minimum distance of 7m away from the trail.
- (h) Move away at least 300m. Do not return for a period of at least 30mins after burning has finished.
- (j) If the fire goes out, do not approach for at least 15mins. Do not add kerosene or diesel oil unless certain that the flame is completely extinguished.
- (k) Bury the residue as it is poisonous to livestock.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indices

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European Inventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a MSDS report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this MSDS report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.