

# We make mining easier

All your blasting needs, with Platinum service

## Safety Data Sheet



### Section 1: Identification

<b>Product Identifier</b>	HydraFlow Series (HydraFlow X-70, HydraFlow X-80 and HydraFlow X-90) Hydra and Titan 2000 Emulsion based.
<b>Other means of identification</b>	Ammonium nitrate-based mining explosive, blasting explosive
<b>Recommended use of the chemical and restrictions on use</b>	HydraFlow product series are blasting explosives for mines, using Platinum Blasting Services technology. The preparation and delivery of the HydraFlow product series at mines' blastholes require a licensed MPU. HydraFlow product series require sensitisation using effect chemicals to properly work. HydraFlow product series are classed as security sensitive ammonium nitrate (SSAN) in Australian states and therefore Platinum Blasting services personnel and other users or customers may need security clearances.
<b>Details of manufacturer</b>	Platinum Blasting Services Pty Ltd ABN 67 600 020 488 Level 12, 500 Queen St Brisbane QLD 4000
<b>Emergency phone number</b>	1800 885 411 / 24 hours

### Section 2: Hazard identification

<b>GHS and DG classification of HydraFlow product series</b>	Based on the components of HydraFlow product series (emulsion and ANFO), the product is classified as hazardous chemical according to Safe Work Australia [1]. HydraFlow product series are classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail (7.7 <sup>th</sup> ed.)[2].	
<b>Hazardous classification of S2 Hydra product</b>	Explosive Oxidising Liquid Category 2 Eye Irritation Category 2A Carcinogenicity – category 1B Aspiration hazard – category 1 Skin irritation – category 2 Reproductive toxicity – category 2 AUH044: Risk of explosion if heated under confinement	
<b>Label elements</b>		
<b>Signal word</b>	Danger	
<b>Labelling</b>		
<b>Hazard statements</b>	H201	Explosive; mass explosion hazard
	H272	May intensify fire; oxidiser
	H319	Causes serious eye irritation

	H304	May be fatal if swallowed and enters airways
	H315	Causes Skin irritation
	H350	May cause cancer
	H361	Suspected of damaging fertility or the unborn child
	AUH044	Risk of explosion if heated under confinement
<b>Precautionary Statements</b>	<b>Prevention</b>	
	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood
	P210	Keep away from heat, sparks, open flames or hot surfaces. - No smoking
	P220	Keep away from clothing and other combustible materials.
	P250	Do not subject to grinding, shock, friction, impact, electrical energy from extraneous source (lighting, static electricity, stray currents, galvanic electricity or electromagnetic radiation) or any form of heating.
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves, protective clothing and eye protection.
	<b>Response</b>	
	P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER
	P308 + P313	IF exposed or concerned: Get medical advice/attention
	P331	Do NOT induce vomiting
	P370 + P372 + P380 + P373	In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
	P337+P313	If eye irritation persists, seek medical advice/attention
	P362+P364	Take off contaminated clothing and wash it before reuse.
	P302+P352	IF ON SKIN: Wash with plenty of soap and water
	P333+P313	If skin irritation or occurs - seek medical advice/attention.
	<b>Storage</b>	
	P401	This product must be stored fit for purpose silos / tanks approved by Platinum Blasting Services. Alternative storage approach might be used if a risk assessment is conducted and reviewed by Platinum Blasting Services
	<b>Disposal statements</b>	
	P503	Refer to Platinum Blasting Services disposal instructions in Section 13

### Section 3: Composition/information on ingredients

Ingredient	CAS	Content	Ingredient classification (as per GHS)
Ammonium nitrate	6484-52-2	> 50%	H272 H319
Fuels, Diesel No 2	68476-34-6	< 10%	H304 H351
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	< 1%	H315 H350 H361
Water	7732-18-5	< 25%	
Non-hazardous component (s)	Various	< 1.0%	

## Section 4: First aid measures

<b>Eye contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>Wash out immediately with fresh running water.</li> <li>Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> </ul> <p>Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</p>
<b>Skin contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> </ul> <p>Seek medical attention in event of irritation.</p>
<b>Inhalation</b>	<p>If fumes products are inhaled remove from contaminated area. Other measures are usually not necessary.</p>
<b>Ingestion</b>	<p>If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.</p>

## Section 5: Fire-fighting measures

HydraFlow product series are manufactured and delivered into a blasthole in one step. HydraFlow product series are expected to remain in the MPU hoses and hopper (around 200 kg).

<b>Suitable extinguishing media</b>	<p>If fire occurs in the MPU (cabin, engine, etc), use the fire extinguisher available in the MPU. If fire persists and looks likely to reach MPU bins or hose reel, evacuate the area to a distance determined by Platinum Blasting Services. If fire occurs in the HydraFlow pump (after the hopper), shutdown the MPU system and use water. If fire persists, evacuate the area</p>	
<b>Special Hazards arising from the substrate or mixture</b>	<p>HydraFlow product series are explosives with oxidising characteristics. It may support combustion of other material and increase the intensity of a fire, releasing harmful fires. Ultimately the HydraFlow product may explode. Under normal conditions of operations, when the product is made by a MPU, the inventory of HydraFlow should be around 0 – 200kg. However, other energetic materials are present in the MPU and an explosion may take place if fire is present [3] There is a risk of harmful fumes during the fire. Wind directions should be determined when evacuating.</p>	
<b>Advice for firefighters</b>	Fire Fighting	<p>Alert emergency services about the fire (an emergency plan must be in place). The area where the fire is taking place must be evacuated as a fire may involve a risk of explosion. HydraFlow product series, being heated by fire, may decompose first and may emit irritating, poisonous or corrosive fumes such as:</p> <ul style="list-style-type: none"> <li>carbon monoxide (CO)</li> <li>carbon dioxide (CO<sub>2</sub>)</li> <li>nitrogen oxides (NO<sub>x</sub>)</li> </ul> <p>Firefighters must pay attention to the wind direction and fume movement. Firefighters must not approach MPU to fight the fire. An exclusion area must be kept according to Platinum Blasting Services emergency plan.</p>
	HAZCHEM	E

## Section 6: Accidental release measures

HydraFlow product series will be present in the MPU hopper and hose (around 200 kg). No evidence of large spillage (>1000 kg) of products similar to HydraFlow have been found in the public available literature. It is anticipated that in an event of spillage, the total amount would be less than 0.5 tonnes, and this would happen inside of a mine site, not public roads.

<b>Personal precautions</b>	<p>Avoid walking through spilled product. Avoid all contact with skin and eyes. PPE must be worn – see section 8 for details. Always wash hands with soap and water after handling spilt product. DO NOT allow clothing wet with material to stay in contact with skin.</p>
<b>Environmental precautions</b>	<p>Clean up immediately using with non-metallic implements (spark free shovel) to avoid friction and impact when collecting material. Addition of water to the spilt material is recommended. Scoop up material and collect in properly labelled containers, with loose fitting lids and properly labelled, for disposal. This material is classified as a Security Sensitive Ammonium Nitrate (SSAN). Spillage recovery needs to be appropriately documented and material accurately accounted for. For large spillage (&gt; 100kg), do not use large equipment to collect spilt material (front loader).</p>

	<p>Alert site fire brigade and tell them location and nature of hazard.</p> <p>DO NOT mix fresh with recovered material.</p> <p>Ensure that contaminated material, like clothing, is thoroughly washed before re use and surfaces (truck, MPU, floor in manufacturing plants) are decontaminated before re-start.</p> <p>Avoid spilt and pick up material to contact any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials like copper / brass, as secondary reactions may result.</p> <p>Prevent entry of the product into cavities or drainage systems such as sewers, drains, waterways, streams, ponds or basements or confined areas.</p> <p>If contamination of drains or waterways occurs advise emergency services.</p>
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## Section 7: Handling and storage



HydraFlow product series are handled by mechanical means in the MPU – pumps and augers. HydraFlow product series have been designed for manufacture and delivery in one step into a blast hole. Therefore, storage of the product in the MPU manufacture or another type of storage is not allowed. Small samples of less than 1kg can be stored for assessment (quality, density check, etc).

<b>Handling - General information</b>	<p>Platinum employees must wear PPE when handling the product – see Section 8.</p> <p>HydraFlow product series can only be handled in controlled areas (bench at mines) where the MPU is working, by trained personnel</p> <p>HydraFlow are bulk products which are manufactured and loaded into a blast hole by an MPU and, therefore, the potential contact product - field personnel are limited to taking samples for density, drippings from the hose when moving between blast holes. HydraFlow series is not designed to be stored in bulk, only small samples to check quality, etc.</p> <p>In normal conditions HydraFlow product series should not find any product / surface that are incompatible with.</p> <p>The products do not produce mist or sprays or dusts.</p> <p>Always wash hands after handling and before smoking, eating, drinking or using the toilet.</p>
<b>Conditions for safe Storage and handling, including any incompatibilities</b>	<p>This product is not designed for storage in bulk – The product is blended and delivered into blast holes by a MPU using Platinum Blasting Services technology.</p> <p>Platinum employees must wear PPE when handling the product – see Section 8.</p> <p>HydraFlow bulk product series are handled in the MPU using Platinum approved pumps.</p> <p>Once finished pumping / delivering product for the day, MPU product lines must be cleaned by using water to avoid the presence of sensitised product in them overnight.</p> <p>It is suggested to clean the hose while loading the last blast holes in the bench.</p> <p>Small samples can be taken in field when the trucks make the product – for example to measure density of the final product and monitor crystallisation, etc. Where possible use plastic elements to handle the product (plastic containers, plastic spatula, etc). A site-specific risk assessment must be conducted if the sample needs to be stored over time – it should be in a 1.1D licensed magazine for not more of 20 days. Consider compatibility with any other product already stored in the magazine.</p> <p>Small samples of HydraFlow could also be made at Platinum laboratories. Platinum has specific procedures for those situations.</p> <p>Remove contaminated clothing and protective equipment before entering eating areas</p> <p>Keep product away from heat (truck’s exhaust or any other hot surface), flammables or combustibles.</p> <p>Keep cool, dry and away from incompatible materials (for example solution for gassing).</p> <p>Samples taken to conduct density measurements during manufacturing and delivery can be returned to the MPU’s hopper.</p> <p>Deteriorated product. Should the product deteriorate / breakdown during pumping, consult a Platinum specialist personnel BEFORE attempting to continue pumping this product.</p>

## Section 8: Exposure controls/personal protection

In standard operations / use, HydraFlow product series are made by truck in an open environment – mines’ benches. The product is made in a closed circuit (only one opening – the hopper after the auger in the MPU). The products do not produce mist or sprays or dusts during the preparation in the MPU.

<b>Exposure controls measures</b>	HydraFlow product series’ exposure limits have not been determined by Safe Work Australia or any other agency. However, it is recommended to follow the available exposure limits for HydraFlow product series raw materials (diesel, oils and ammonium nitrate).			
	<b>TWA</b>		<b>STEL</b>	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
	<b>Ammonium nitrate</b>	10		
	<b>Oils [4]</b>	Poses no unreasonable risk to human health based on Tier I assessment under the NICNAS IMAP assessment framework		
<b>NO<sub>2</sub> [5]</b>	-	5.6	1	1.91
<b>Appropriate engineering controls</b>	Under normal conditions, HydraFlow product manufacture is conducted in an enclosed system. Additionally, the product is manufactured in an open environment (bench on a mine site). Therefore, over-exposure to airborne concentration to oil mix or NOx is not expected to occur.			
<b>Individual protection measures, such as Personal Protective Equipment (PPE)</b>	The minimum recommended PPE and their standard when the HydraFlow product series are handled is as follow			
		AS/NZS 1337.1:2010. Personal eye protection Eye and face protectors for occupational applications		

	AS NZS 4501.1 - 2008 Occupational protective clothing - Guidelines select, use, care and maintenance
	AS/NZS 2161.1:2016. Occupational protective gloves, Part 1: Selection, use and maintenance AS/NZS 2161.3:2020. Occupational protective gloves, Part 3: Protection against mechanical risks
	AS/NZS 2210.1:2010 Safety, protective and occupational footwear - Guide to selection, care and use

## Section 9: Physical and chemical properties

Physical state	Viscous fluid with white suspended particles	pH (as supplied)	N/A
Colour	N/A	Viscosity (Pa*s)	20 – 50 Pa*s
Odour	N/A	Solubility in water	Soluble in water
Melting / freezing point (°C)	< 0°C	partition coefficient: n-octanol/water (log value)	
Initial boiling point and boiling range (°C)	> 100°C	Vapour pressure (kPa)	N/A
Flammability	N/A	Relative density (Water = 1)	Depending on blasting conditions: 1.05 – 1.25 g/ml @ 15 - 30°C
Upper Explosive Limit (%)	N/A	Vapour density (Air = 1)	N/A
Lower Explosive Limit (%)	N/A	Explosion Data – Sensitivity to Mechanical Impact	Not sensitive to mechanical impact events present at the MPU.
Flash point (°C)	N/A	Explosion Data – Sensitivity to Static Discharge	Not sensitive to static discharge
Auto-ignition temperature (°C)	N/A	Explosive properties	Explosive when sensitised (once in is in the blast hole)
Decomposition temperature	> 100°C	Molecular weight (g/mol)	N/A
Evaporation rate	N/A	Surface Tension (dyn/cm)	N/A

## Section 10: Stability and reactivity

HydraFlow product series are made in a controlled environment (mine site) and risk assessment have been conducted to prevent any unwanted reaction with materials present at the bench.

Reactivity	HydraFlow product series are expected to react with nitrite (Platinum gassing solution) during the sensitisation process, however this is a controlled reaction. When manufacturing and delivering into the blasthole reactivity may occur with the type of ground being blasted. It is advised to conduct reactive ground testing to check for suitability between this product and the ground.
Chemical Stability	HydraFlow product series are stable under the conditions present at the MPU. However, product may crystallise – if this occurs, production must stop. Platinum Blasting Services technical personnel must be contacted.
Conditions to avoid	Avoid exposure to friction, heat, shock, sources of ignition, and open flame. Potential source of heat / fire is a malfunctioning of the pumps (causing dead heading or dry running) in the MPU. Evidence shows that MPU having products similar to HydraFlow have detonated once catching fire [3].
Incompatible materials	Under normal conditions of manufacture and delivery into blast holes at mine sites, the chances of the product to get in contact with incompatible chemicals should not occur. Materials which could react with ammonium nitrate are tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, bromates, chlorates, chlorites, hypochlorites, permanganates, perchlorates, chloroisocyanurates, strong alkalis, strong acids, any combustible material and metal powders. However, these materials are not expected to be present during the life cycle of the product.
Hazardous decomposition products	Under normal conditions of use, at the mine sites, HydraFlow product series are stable. However, nitrogen oxides and carbon monoxide may be emitted under heat – see “conditions to avoid” above. Products can also emit NOx after blasting if procedures for loading and gassing are not followed. However, this will happen long after the product has been manufactured.

## Section 11: Toxicological information

HydraFlow product series' components do not react with each other and as a result no different chemicals are formed. HydraFlow product series are stable during manufacture in the MPU and also stable over time when in the blast hole. Additionally, the products are only handled in a closed circuit by pumps in the MPU. Contact with the HydraFlow product series could happen during quality control / density check or dripping on the ground at the mine. However, data from individual components will be shown in this section.

Acute toxicity	There is no LD50 data available for the HydraFlow product.
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	Ammonium nitrate, the Oral LD50 (rat) = 2217 mg/kg., Dermal LD50 (rabbit): 3000 mg/kg. [6]
<b>Skin corrosion / irritation</b>	<p>While no data are available for ammonium nitrate, no significant adverse effects were reported following skin sensitisation exposure to another nitrate compound which contained both of the constituent ions of the chemical.</p> <p>In a skin sensitisation study (local lymph node assay: OECD TG 429), mice were exposed to calcium ammonium nitrate at doses of 0 %, 10 %, 25 % and 50 % (five animals per/dose) on three consecutive days. The test groups had calcium ammonium nitrate applied directly to the dorsal surface of both ears.</p> <p>While erythema was shown to occur in all animals at 50 % and in one animal at 25 %, the stimulation index (SI) for skin sensitisation was reported to be &lt;3. Therefore the chemical is not considered to be a skin sensitiser. Additionally, no change in body weight, no mortality, no systemic toxicity or oedema was reported for any treatment group of animals (REACH) [7]</p>
<b>Serious eye damage / irritation</b>	<p>In an OECD guideline study (TG 405), 100 mg of ammonium nitrate was applied to the eyes of rabbits over a 24-hour exposure period. It was reported that animals tested had an average score for redness of the conjunctivae of &gt;2.5 during the first 3 days after exposure. The effects were reported to be fully reversible within 7-10 days (REACH).</p> <p>In another study in rabbits, ammonium nitrate was reported to be moderately irritating to the eyes, causing conjunctival effects and mild iritis (inflammation), although no corneal effects were noted. The effects were reported to be fully reversible after 7 days (REACH).</p> <p>There is sufficient evidence to classify ammonium nitrate as an eye irritant (H319) [7].</p>
<b>Respiratory or skin sensitisation</b>	<p>The chemical was not found to be a skin irritant in New Zealand White rabbits when tested according to OECD Test Guideline (TG) 404.</p> <p>Rabbits were exposed to 0.5 g of the chemical under occlusive conditions moistened with water, over four hours and observed during a 72 hour period (at 1, 25, 48 and 72 hours). It was reported that exposure to the chemical resulted in low Draize scores with no reported oedema (swelling) or erythema (redness) (REACH) [7].</p>
<b>Germ cell mutagenicity</b>	Data not available
<b>Carcinogenicity</b>	Data not available
<b>Reproductive toxicity</b>	Data not available
<b>Specific Target Organ Toxicity (STOT)—single exposure</b>	Data not available
<b>Specific Target Organ Toxicity (STOT)—repeated exposure</b>	Data not available
<b>Aspiration hazard</b>	<p>A case study in humans reported that no systemic oral toxicity was observed in 23 patients who had taken up to 9 g of ammonium nitrate daily for an undefined period of time. The chemical was taken as a preventive treatment for calcium phosphate renal stones (OECD 2007; REACH).</p> <p>Another case study reported oral ingestion of the chemical (single doses between 64 and 234 grams) by five patients which did not cause severe toxic effects. However, some patients experienced gastritis (inflammation of the lining of the stomach), slightly increased methaemoglobin levels, and mild hypertension (high blood pressure) (OECD 2007; REACH)[7].</p>

## Section 12: Ecological information

HydraFlow product series have not been tested for aquatic toxicity or other ecotoxicological effects. However, if product enters water way, ammonium nitrate will start slowly leaching from the HydraFlow product series after 30 days. Therefore, the ecological information of HydraFlow product series is based on the ecological information of ammonium nitrate

<b>Ecotoxicity</b>	<p>Toxicity of nitrates (Ammonium nitrate, calcium nitrate, calcium nitrate double salt, magnesium nitrate, Nitcal-K, potassium nitrate and sodium nitrate were evaluated) to fish [8].</p> <ul style="list-style-type: none"> <li>Acute – LC50 &gt;100 mg/L</li> <li>Long term - NOEC 58 mg/L (study on sodium nitrate)</li> </ul> <p>Toxicity of nitrates to aquatic invertebrates:</p> <ul style="list-style-type: none"> <li>Acute – LC50 &gt;100 mg/L</li> <li>Long term - unavailable</li> </ul>
<b>Persistence and degradability</b>	<p>The mixture itself has not been tested for aquatic toxicity or other eco-toxicological effects, and therefore the classification of the mixture is based on the classification of individual components.</p> <p>This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): &gt;100 mg/L</p> <p>The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment</p>
<b>Bioaccumulative potential</b>	No data is available on ammonium nitrate.
<b>Mobility in soil</b>	No data is available on ammonium nitrate.
<b>Other adverse effects</b>	No data is available on ammonium nitrate.

## Section 13: Disposal considerations


HydraFlow product series, under unexpected conditions, could crystallise. Platinum Blasting Services will provide guidance for the disposal of the product.



HydraFlow product series are classified as a Security Sensitive Explosive (SSE) in Australia, disposal of material needs to be appropriately documented and material accurately accounted for.

## Section 14: Transport information

HydraFlow product series are classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail. However, Platinum Blasting Services advises that the product must not be transported in bulk. They must be manufactured on site and loaded immediately by using an MPU. Should a need to transport this product in quantities smaller than 5 kg (for special tests), Platinum Blasting services must be contacted before shipping, and the below marking must be used.

<b>Road and Rail Transport</b>	<b>UN No:</b>	<b>0241</b>
	Proper Shipping Name or technical name	EXPLOSIVE, BLASTING, TYPE E
	Transport Hazard Class:	Explosive Class 1.1D
	Packing group	NA
	Dangerous Goods Class Label	
	Hazchem or Emergency Action code	E
<b>Marine Transport</b>	Contact Platinum Blasting services representative	
<b>Air Transport</b>	Contact Platinum Blasting services representative	

## Section 15: Regulatory information

<b>Hazard Classification</b>	The hazard classification has been based on HydraFlow's main components - ammonium nitrate, diesel and oils. These components are classified as Hazardous chemicals by SafeWork Australia.
<b>Dangerous Good classification</b>	HydraFlow is classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail
<b>Security</b>	Chemicals used in the preparation of HydraFlow are included in the list of 96 'Chemicals of Security Concern' identified by the Council of Australian Governments (COAG). This listing has an additional note for Security Sensitive Ammonium Nitrate (SSAN), where specific state-based restrictions apply: 'ammonium nitrate, ammonium nitrate emulsions and ammonium nitrate mixtures containing greater than 45 per cent ammonium nitrate excluding solutions' (SafeWork SA).
<b>Poison schedule</b>	none allocated

## Section 16: Other information

The following sources were consulted in the preparation of this SDS

- Model Code of Practice: Preparation of safety data sheets for hazardous chemicals – SafeWork Australia
- Classifying hazardous chemicals, National guide, SafeWork Australia 2020
- Hazardous Chemical Information System (HCIS) - <http://hcis.safeworkaustralia.gov.au/>
- Chemical assessment database at <https://www.industrialchemicals.gov.au/chemical-information/search-assessments>
- Australian Code for the Transport of Dangerous Goods by Road & Rail
- Model Work Health and Safety Regulations as at 1 January 2021 as released by Safe Work Australia
- The chemical is also included in the list of 96 'Chemicals of Security Concern' identified by the Council of Australian Governments (COAG).
- National Library of Medicine (NIB)
- European Chemical Agency (ECHA)
- Cameo chemicals

### Abbreviations

ADG	Australian Dangerous Goods
ECHA	The European Chemical Agency
MPU	Mobile processing unit
GHS	Globally Harmonised System
Kg	Kilo
NOEC -	No Observed Effect Concentration
SSAN	Security sensitive ammonium nitrate
SSE	Security Sensitive Explosive

TWA	The time weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.
STEL	Short Term Exposure Limit. the airborne concentration of a particular substance calculated as a time- weighted average of 15 minutes, which should not be exceeded at any time during a normal eight-hour workday.

### Disclaimer

To the best of our knowledge the information contained within this document is accurate at the time of publishing. Platinum Blasting Services assumes no liability whatsoever for the accuracy of completeness of information contained herein. Since Platinum Blasting Services cannot anticipate or control the conditions under which the product may be used, each user must, prior to use assess and control the risks associated with the application of the product.

For any clarification or further information please contact Platinum Blasting Services. This product is supplied under Platinum Blasting Services standard terms and conditions unless otherwise agreed prior.

### References

- 1 HCIS database, <http://hcis.safeworkaustralia.gov.au/HazardousChemical/Details?chemicalID=3220>
- 2 [https://www.ntc.gov.au/sites/default/files/assets/files/ADG%20Code%207.7\\_0.pdf](https://www.ntc.gov.au/sites/default/files/assets/files/ADG%20Code%207.7_0.pdf)
- 3 REPORT – Explosion Accident during Mobile Production of Bulk Explosives, Report by DSBs project committee on the follow up of the accident in Drevja on the 17th of December 2013
- 4 <https://www.industrialchemicals.gov.au/chemical-information/search-assessments?assessmentcasnumber=8012-95-1#cas-number>
- 5 <https://echa.europa.eu/substance-information/-/substanceinfo/100.030.234>
- 6 <https://www.cdc.gov/niosh-rtecs/BR8A1790.html>
- 7 [https://www.industrialchemicals.gov.au/sites/default/files/Nitric%20acid%2C%20ammonium%20salt\\_Human%20health%20tier%20I%20assessment.pdf](https://www.industrialchemicals.gov.au/sites/default/files/Nitric%20acid%2C%20ammonium%20salt_Human%20health%20tier%20I%20assessment.pdf)
- 8 <https://echa.europa.eu/registration-dossier/-/registered-dossier/15999/6/2/1>