RAIL TRACK SIGNAL RTS600

SAFETY DATA SHEET

DATE OF ISSUE: 03/08/2023
REVISION NUMBER: 8

Section 1: IDENTIFICATION OF THE MATERIAL & SUPPLIER

PRODUCT IDENTIFICATION: **Railway Track Signal 50/12/1 RTS600 1.4S UN0193**
COMPANY: Howard & Sons Pyrotechnics (Manufacturing) Pty Ltd
ADDRESS: Pipers Flat Road Wallerawang, New South Wales, 2845, Australia
TELEPHONE: (02) 6355 7301
EMERGENCY TELEPHONE NUMBERS: Christian Howard 0418 218 432 or Andrew Howard 0419 270 535
POISON INFORMATION: 13 11 26 **IF RELEASED:** CALL 000

Section 2: HAZARDS IDENTIFICATION

PRODUCT NAME: **Railway Track Signal 50/12/1**

HAZARD CLASSIFICATION: DANGEROUS GOODS, Non-hazardous substance as per (NOHSC 1008:2004)
PRODUCT ID: **RTSMAN** **USE:** Audible Warning Device
UN NUMBER: 0193 **DANGEROUS GOODS CLASS AND SUB RISK:** 1.4S
HAZCHEM CODE: E **POISONS SCHEDULE:** None Allocated
PACKING GROUP: S **SUBSIDIARY RISK:**
STABILITY & REACTIVITY: This product is stable and non-reactive.
Avoid transporting with strong acids or alkalies keep dry keep away from flame or excessive heat.
Hazardous Polymerization will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of sulphur and nitrogen gases produced in use.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL ENTITY	CAS NUMBER	PROPORTION
Potassium Chlorate	3811-04-0	30 – 60%
Sulphur	7704-34-9	30 – 60%
Silica Sand	- - - - -	10 – 29%
Poly Vinyl Acetate	9003-20-7	<1%
Guar Gum	9000-30-0	<1%
		=100

TECHNICAL SPECIFICATIONS							
Effect Description	Emits an audible report in excess of 150 Decibels						
Case Dimensions	50 mm DIA X 10mm Thick			**Internal Diameter**		N/A	
Effect Height	N/A	**Effect Width**	N/A	**Burn Time**	Instant	**Fuse Head**	N/A
Plastic Weight	3 Grams	**Paper Weight**	N/A	**Clay Weight**	N/A	**NEQ Comp**	8 Grams
NEQ Star	N/A	**NEQ Inserts**	N/A	**NEQ B\Pdr**	N/A		
NEQ Total	8 Grams	**Total Gross Weight of Product**			13 Grams		
Sub Box Size	N/A	**Cannisters Per Carton**		50	**Carton Size CMB**		0.029
Carton Dimensions	310mm x 310mm x 300mm			**Packing**	50/12/1	**Sub Box Net Weight**	N/A
Canister Weight Net	35 Grams	**Carton Weight Net**		9.35kg	**Carton Weight Gross**		10.15kg
Carton Explosive Content	4.8kg						
Firing Controls	Initiated by the extreme pressure inherent between a locomotive wheel and the track						
Set Up	Place nonslip green face on track. Ensuring that the wire assembly part of the Rail Track Signal is facing the direction of the approaching rolling stock, unfurl the aluminium wire attached and wrap it around and into the profile sides of the track.						

Section 4: FIRST AID MEASURES

Eye: Immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately.

Skin: Immediately wash the contaminated skin with water. If this chemical penetrates the clothing, immediately remove the clothing, and wash the skin with water and soap. If symptoms occur after washing, get medical attention immediately

Smoke Inhalation: Remove patient to fresh air, lay down, rest. Keep patient warm.
If the patient is not breathing, make sure the airway is clear and apply artificial respiration Call 000 immediately.

Swallow: If swallowed, get medical attention immediately.

Section 5: FIRE FIGHTING MEASURES

Provide access to fire extinguisher at all times. Extinguisher must comply with relevant classification.

HAZCHEM CODE: E **EXTIGUISHING MEDIA:** Water **SPECIFIC HAZARD:** Very Loud Instant Report in excess of 150dBA

DO NOT USE POWDER OR CO_2 FIRE EXTINGUISHERS.
HAZARDS FROM COMBUSTION PRODUCTS: Hazardous Polymerization will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of sulphur and nitrogen gases produced in use.
DO NOT FIGHT EXPLOSIVE FIRES.
FIRE MAY BURN FIERCLY AND INCREASE THE INTENSITY OF A FIRE. MAY THROW SMALL MISSILES AND BURNING DEBRIS OVER A SHORT RANGE.
CONSULT THE EMERGENCY PROCEEDURE GUIDE TRAVELLING WITH THIS PRODUCT FOR FIRE SITE SPECIFIC FIRE FIGHTING PROCEDURES AND EVACUATION DISTANCES.

Section 6: ACCIDENTAL RELEASE MEASURES

In case of spillage, dampen powders with water. Sweep up any powders using natural fiber brushes and non-ferrous dust pans. Do not use steel, or any material that could produce sparks or present a risk of static discharge. It is recommended PPE is worn by those cleaning the spill to prevent contamination of skin, eyes and personal clothing.
The removal of ignition sources and provision of sufficient ventilation is also recommended.
Also please refer to the **Emergency Procedure Guide** supplied with the Shipping Document by the freighter. This will detail safety distances based upon the entire load on-site, providing the Net Explosive Quantity (kg) and Class/UN of the total product.
It will provide further safety measures relating to the total product.

Section 7: HANDLING & STORAGE

STORAGE: Lighters, matches, open flame or other source of ignition, or volatile materials are not allowed within 5m of any magazine.

DO NOT make any repairs to the inside or outside of a magazine containing any explosive material.
ALWAYS be sure magazines are solidly built and securely locked, in accordance with the Australian Standard of each State / Territory Explosive Act/Regulations to protect the explosive materials from weather, fire and theft.
Keep insides of magazines clean, dry, cool and well ventilated.

TRANSPORT: **Class 1.4S. UN Number 0193.** Transport as per Section 8 of the Australian Dangerous Goods Code. Keep Dry.
NEVER ship explosive materials in any packaging except their original packaging or alternate approved packaging provided by the manufacturer.
Load and unload explosive materials carefully.

DOCUMENTATION: As per Section 4 of the Australian Dangerous Goods Code.
Clean up spills of explosive materials promptly. Create a containment zone until the hazard has been removed.

FIRE/EXPLOSION HAZARD:
NEVER:

1. Expose explosive materials to flame, excessive heat, sparks, friction or impact.
2. Fight fires when explosive materials are involved. Remove all personnel to a safe location immediately and guard area against unauthorised personnel.
3. Dismantle, or in any way, investigate the contents of the explosive device.
4. Use any explosive materials unless completely familiar with the safe and correct procedures for their use.
5. Use explosive materials that have been water soaked.

ALWAYS remember you are handling explosive materials. Use reasonable care to protect the explosive materials from extremes of heat, friction or shock. ALWAYS keep explosives locked up. Consult Australian Standard 2187.1/2/3/4 for further information.
Pyrotechnic substance capable of burning with intense heat. Produces oxides of Sulphur, Carbon, Nitrogen and metal slag.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Not relevant in packaged form.

EXPOSURE STANDARDS:	Not relevant
AUDIBLE EXPOSURE DECIBLES:	150 DBA
ENGINEERING CONTROLS:	N/A
IN USE	THIS PRODUCT IS FOR OUTDOOR USE ONLY. INITIATION BY EXTREME COMPRESSION ONLY. THIS PRODUCT HAS A MINIMUM SAFETY DISTANCE TO PERSONNEL OF 10 MTRS SECURE TO RAILWAY TRACK AS PER SET UP INSTRUCTIONS ABOVE. READ IN CONJUNCTION WITH THE ATTACHED INSTALLATION DIAGRAMS. RELEVANT HEALTH HAZARD INFORMATION: Follow Section 4 for First Aid procedures.

- It is not recommended to allow contact with skin or eyes.
- Do not breathe in large amounts of the substance.
- Do not swallow any amount of this substance.

No Biological Monitoring Required

Section 9: PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE: Orange and Green flat cylindrical case 50mm in diameter and 10mm width. Wire attachment.

BOILING POINT / MELTING POINT:	N / A	FLASH POINT (C):	N / A
VAPOUR PRESSURE:	N / A	FLAMMABILITY LIMITS (%):	N / A
SPECIFIC GRAVITY:	N / A	SOLUBILITY IN WATER (g/L):	< 65%

Section 10: STABILITY & REACTIVITY

EXPOSURE STANDARDS: This product is stable and non reactive.
SHELF LIFE: **If stored in dry, cool conditions 5 years from manufacture date.**
The manufacture date is stamped on the RTS case

NEVER use explosive materials that show any sign of deterioration.
NEVER expose explosive materials to extreme sources of heat or to open flame.
NEVER subject explosive materials to excessive impact or friction.

Section 11: TOXICOLOGICAL INFORMATION

Oral LD_{50} (Rats):	>5050 mg/kg body weight
Dermal LD_{50} (Rats):	>2020 mg/kg body weight
Inhalation @ 90% LC_{50} (Rats):	>5.49 mg/L air concentration
Skin Effects (Rabbits):	Slightly irritating
Eye Effects (Rabbits):	Minimal irritation in non-washed eyes

CARCINOGENICITY, TERATOGENICITY, MUTAGENICITY:
This product does not contain any ingredient designated by IARC, or NOHSC as a probable human carcinogen.
Do not eat or swallow. Effects once ingested are unknown. Ensure adequate ventilation.
ALWAYS remain clear of the detonation area until post-blast fumes, dusts, or smoke has subsided.
NEVER breathe dust or vapours from explosive materials.

Section 12: ECOLOGICAL INFORMATION

Dispose of all debris responsibly. Clean up surrounding area using a rake and collect any remaining debris.
Ecotoxicity: Raw materials are toxic to flora and fauna. Final product casing greatly reduces risk to the environment and wildlife. Provided that the case can be determined as free from explosives, the spent cases can go to licensed landfill.

Section 13: DISPOSAL CONSIDERATIONS

TO DISPOSE OF UNFIRED RAILWAY TRACK SIGNALS CONTACT HOWARD & SONS PYROTECHNICS ON (02) 6355 7301.
Disposal of unfired product should only be carried out by a licensed contractor.
ALWAYS dispose of explosive materials by shipping them to an approved disposal agency. Packaging, marking, labelling and transporting must be in accordance with regulations. NEVER ship explosive materials in any packaging except their original packaging or alternate approved packaging provided by the manufacturer.
Special conditions and instructions may apply. Specific guidance should be obtained from the manufacturer.
NEVER leave explosive materials or packaging materials where children, unauthorized persons or accessible to livestock.
NEVER allow any packaging materials to be burned in a confined space or to be reused.
When returning Railway Track Signals to the manufacturer contact for approval prior to shipment you will need to provide Howard & Sons with the following information-

- Unit count to be returned
- If you require approved packaging
- Collection address

Section 14: TRANSPORT INFORMATION

UN number:	**0193**
UN Shipping name:	**Railway Track Signals**
Class:	**1.4S**
Dangerous Goods Packing Group:	**II**
Hazchem Code:	**E**

Further Precautions for user:
Ensure the correct documentation is present:-

- 1.4S Emergency Procedure Guide.
- Shipping Document as per Section 4 of the Australian Dangerous Goods Code.
- Transport as per Section 8 of the Australian Dangerous Goods Code. Keep Dry.
- Explosive materials must travel within their original UN approved packaging
- Ship with licensed carriers only

Section 15: REGULATORY INFORMATION

It is a regulation in every state or territory in Australia that a license is required to purchase, store and use this product. Contact your state / territory regulatory authority for further information.

	Package from Howard & Sons Pyrotechnics	Maximum in storage without Storage Licence	Transport Requirements
NSW	50/12/1 RTS600 = 4.8kg NEQ	10kg NEQ	Lockable Box or Original Packaging <10 NEQ
VIC	50/12/1 RTS600 = 4.8kg NEQ	50kg NEQ	Lockable Box or Original Packaging <10 NEQ
QLD	50/12/1 RTS600 = 4.8kg NEQ	10kg NEQ	Lockable Box or Original Packaging <10 NEQ
WA	50/12/1 RTS600 = 4.8kg NEQ	30kg NEQ	Lockable Box or Original Packaging <10 NEQ
SA	50/12/1 RTS600 = 4.8kg NEQ	3kg NEQ	Lockable Box or Original Packaging <10 NEQ

Original Packaging	**Lockable Box**
	 

Section 16: IN THE EVENT OF A RAILWAY TRACK SIGNAL MISFIRE

Determination of a misfire of a Railway Track Signal
Misfires shall be determined as follows:
If, when using railway track signals, the number of reports counted is less than the number of track signals laid out, a misfire shall be assumed. If the railway track signal is damaged and unfired content is exposed in a portion of the track signal, it shall be treated as a misfire.
Precautions to observe following a misfire of a Railway Track Signal
Take precautions to prevent access to the misfired track signal by unauthorised persons. No person shall approach the misfire until an interval of 5 minutes has elapsed.
Examination of the misfire
Examination of the misfire will be the responsibility of the site supervisor, primary contractor or licensed operator.
A careful examination should be conducted to determine if explosive debris is present. If debris is present, the track signal shall be immersed in a bucket of water for an interval of 10 minutes, then placed into either a railway track signal canister or a plastic bag (e.g. a sandwich snap bag) keeping the debris moist, and moved to a storage container to be stored in a safe place until disposal in accordance with recommended disposal procedures (see disposal).
Explosive recovered from misfires
No person shall leave unguarded, abandon, discard or otherwise neglect to safely dispose of, any explosive recovered in the treatment of misfires (see disposal).
Notification of misfire to Howard & Sons
Howard and Sons are to be advised immediately of all misfire events, including details of the Lot and Batch numbers, the date of manufacture and the date of expiry so that further investigations may be carried out.

Section 17: OTHER INFORMATION

LICENCING REQUIREMENTS:
As the seller Howard & Sons Pyrotechnics must comply with State and National Law when supplying explosive product to clients. As a rule, the sale must comply with the State Law licencing requirements of the receiver. Further, Howard & Sons must maintain SafeWork NSW requirements when processing, dispatching, and completing a sale.
UNSUPERVISED HANDLING LICENCE: *An Unsupervised Handling Licence does not authorise the holder to purchase or possess explosives and/or dangerous goods in their own right.*

An Unsupervised Handling Licence entitles the licence holder, if nominated on a security plan, to handle explosives and/or security sensitive dangerous substances without supervision subject to the licensee working under the direction and control of a person licensed to be in possession of explosives and/or security sensitive dangerous substances; the handling of the exposives or security sensitive dangerous substances is of a type and manner authorised under the supervisor's licence and the holder of the Unsupervised Handling licence complies with any conditions of the supervisor's license. (NSW Explosives Act 2003, NSW Explosives Regulation 2013).

Date of SDS preparation: 03/08/2023

As the products performance and suitability depends on various factors, the purchasers of our products should determine for themselves whether the product is suitable for their particular use.

WARNING: All explosive materials are dangerous and must be handled and used with care either by or under the direction of competent, experienced persons. All commercial explosive materials are designed to detonate when supplied with a sufficient amount of initiating energy. Explosive materials cannot differentiate between initiating energy purposely supplied or accidentally supplied. It is the responsibility of all persons who handle explosive materials to know and follow all approved safety procedures. This responsibility includes the necessity of being familiar with, and observing federal, state, and local rules and regulations governing explosive materials.

If after careful reading this SDS, you have any questions or doubts as to how to use Railway Track Signals - DO NOT USE THEM - consult the manufacturer for additional information.

CONTACT POINT:	Howard & Sons Pyrotechnics (Manufacturing) Pty. Ltd.	
	Technical Manager	**CHRISTIAN HOWARD**
	Telephone Number:	**WH: (02) 6355 7301 M: 0418 218 432**

Although this information is presented in good faith and compiled from various sources, believed to be accurate, Howard & Sons Pyrotechnics (Manufacturing) Pty. Ltd. make no representations or warrant as to the completeness or accuracy thereof.

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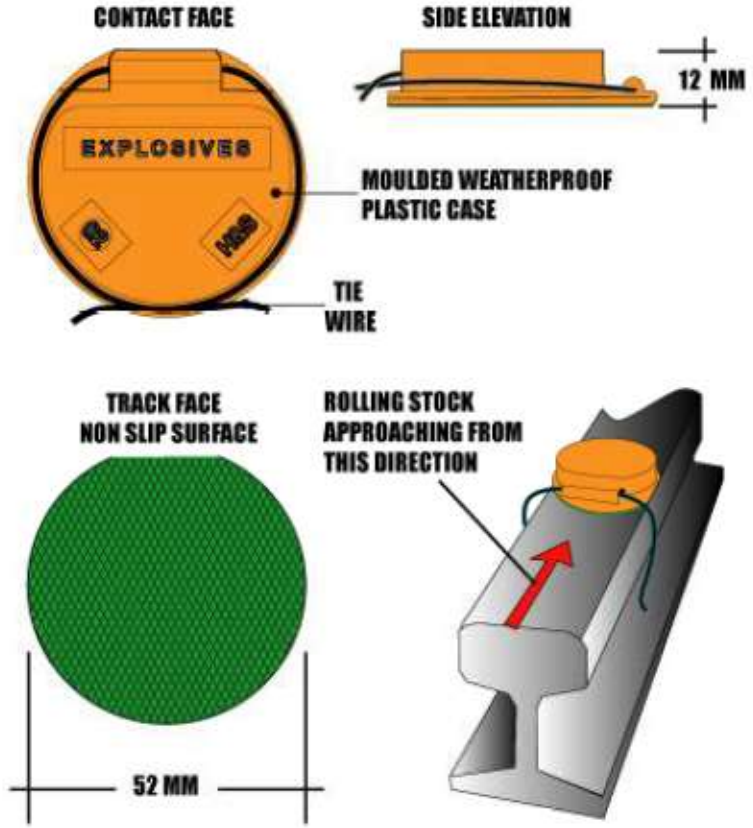
HOWARD & SONS PYROTECHNICS (MFG) P/L
RAILWAY TRACK SIGNAL



RAILWAY TRACK SIGNALS PACKED
FOR USE IN NSW IN CANNISTERS
HOLDING 12 PIECES

HOWARD & SONS PYROTECHNICS	client RTS OPS
	product RAILWAY TRACK SIGNALS
	drawn by DWF date 30.3.2007