SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ACIRS-EC-yyyy (WHERE yyyy=year)**

Synonyms ELECTRODE CARBON ● INERT CARBONACEOUS ADDITIVE (FOR USE IN GRAY-KING COKE TYPE ANALYSIS)

1.2 Uses and uses advised against

Uses LABORATORY ANALYSIS

1.3 Details of the supplier of the product

Supplier name **AUSTRALIAN COAL PREPARATION SOCIETY - ACIRS**

Address 76 Broadmeadow Rd, Broadmeadow, NSW, 2292, AUSTRALIA

Telephone 02 4926 4870

Email acpsnational@acps.com.au

Website www.acps.com.au

1.4 Emergency telephone numbers

Emergency 13 11 26

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ALUMINIUM OXIDE	1344-28-1	215-691-6	<5%
SULFUR	7704-34-9	231-722-6	<5%
FLUORIDE	16984-48-8	-	<1%
TRISODIUM HEXAFLUOROALUMINATE	15096-52-3	239-148-8	<1%
PETROLEUM COKE (CALCINED)	64743-05-1	265-210-9	70 to 90%
IRON OXIDE	1332-37-2	215-570-8	<2%
CALCIUM CRYOLITE	39818-95-6	-	<1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.
First aid facilities	None allocated.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Water fog. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon/ sulphur oxides, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. 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. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Collect solid and place in sealable containers for re-use or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe 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. This material is for use in Gray-King coke type testing which is to be conducted in a fume cupboard with mechanical extraction operating.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Aluminium & compounds	SWA [Proposed]	--	1	--	--
Aluminium oxide (a)	SWA [AUS]	--	10	--	--
Fluorides, as F	SWA [AUS]	--	2.5	--	--
Iron oxide fume (Fe2O3) (as Fe)	SWA [AUS]	--	5	--	--

Biological limits

Ingredient	Determinant	Sampling Time	BEI
FLUORIDE	Fluoride in urine	Prior to shift	2 mg/L
	Fluoride in urine	End of shift	3 mg/L

Reference: ACGIH Biological Exposure Indices

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face Wear dust-proof goggles.

Hands Wear PVC or rubber gloves.

Body Not required under normal conditions of use.

Respiratory Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Full-face Class P3 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BLACK POWDER
Odour	ODOURLESS
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	NOT AVAILABLE
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products
Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met. No toxicological information is available for the product. Toxicity data for ingredients is provided below.

SULPHUR (7704-34-9)
LC50 (inhalation) 1660 mg/m³ (mammal)
LDLo (ingestion) 175 mg/kg (rabbit)

TRISODIUM HEXAFLUOROALUMINATE (15096-52-3)
LD50 (ingestion) > 5 g/kg (rat)
LDLo (ingestion) 9 g/kg (rabbit)

CALCIUM CRYOLITE (39818-95-6)
LD50 (ingestion) > 5g/kg (rat)
LDLo (ingestion) 9g/kg (rabbit)

FLUORIDE (16984-48-8)
LD50 (intravenous) 22800 µg/kg (mouse)
LDLo (ingestion) 50 mg/kg (human)
TDLo (ingestion) 3 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ALUMINIUM OXIDE	> 5000 mg/kg (rat)	--	--
SULFUR	> 3,000 mg/kg (rat)	> 2,000 mg/kg (rabbit)	> 9.23 mg/L/4 hours (rat)
TRISODIUM HEXAFLUOROALUMINATE	> 5 g/kg (rat)	--	--
CALCIUM CRYOLITE	> 5g/kg (rat)	--	--

Skin Not classified as a skin irritant. Prolonged or repeated contact with dusts may be abrasive and mildly irritating to the skin.

Eye Not classified as an eye irritant. However, dusts may be abrasive and irritating to the eyes.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Not expected to cause cancer. Lifetime skin painting studies in mice in which petroleum coke was applied as a 25% mineral oil solution were negative.

Reproductive Not expected to cause reproductive toxicity. A reproductive/developmental toxicity screening study of green coke in rats did not demonstrate effects on fertility or reproductive performance at concentrations of 30, 100, and 300 mg/m3.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not expected to cause organ effects from repeated exposure. Low concentrations of airborne respiratory coke fibres may be present in calcined coke. The fibres are amorphous and generally irregularly shaped, rather than having the crystalline appearance of carbon fibres. Coke fibres have not been studied, but recent laboratory animal studies have shown that carbon fibres are biopersistent in the lung. These studies also demonstrated a lower inflammatory response in the lung and less proliferation of the alveolar cells than fibres that are known to cause fibrosis and lung cancer. Repeated exposure of rats to 10 and 30 mg/m3 petroleum coke dust for two years resulted in signs of lung injury including fibrosis (scarring of lung tissue). Similar exposures in monkeys caused no significant lung effects.

Aspiration This product is a solid and aspiration hazards are not expected to occur.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity studies on samples of petroleum coke show that acute aquatic toxicity values are greater than 1000 mg/L for invertebrates, algae and fish. Elemental carbon, which is the principal constituent of petroleum cokes, poses no risk to aquatic organisms. Residual hydrocarbon concentrations are very low and have a high molecular weight. Such hydrocarbons are too water insoluble to cause acute aquatic toxicity. Therefore petroleum coke is unlikely to pose a long-term hazard to the environment.

12.2 Persistence and degradability

Petroleum cokes are not expected to meet the criteria for ready degradability. Elemental carbon and hence, petroleum coke is a persistent material. Also, any associated very high molecular weight hydrocarbons would only be very slowly biodegraded.

12.3 Bioaccumulative potential

Elemental carbon is not known to bioaccumulate. The very high molecular weight of any associated hydrocarbons, combined with their very low water solubilities, indicate that they are not likely to bioaccumulate. The trace hydrocarbon components of petroleum cokes have values for log Kow greater than 6.

12.4 Mobility in soil

The hydrocarbon components of petroleum cokes have negligible vapor pressures at ambient temperature and volatility is not a significant fate process for these substances.

12.5 Other adverse effects

None anticipated.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, 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.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; 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 report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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