Sakarat Brodifacoum Gel

Safety Data Sheet

Labelling according to The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019

Control of Substances Hazardous to Health Regulations 2002 (as amended). - The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Sakarat Brodifacoum Gel

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: A ready to use rodenticide for use by trained professionals, for the control of mice and rats in and around buildings.

1.3. Details of the supplier of the safety data sheet

Address: Killgerm Chemicals Ltd, Wakefield Road, Ossett, WF5 9AJ

Tel: +44 (0)1924 268 450 **Fax:** +44 (0)1924 265 033 **Email:** technical@killgerm.com

1.4. Emergency telephone number

Medical professionals should use National Poisons Information Service Tel: 0870 600 6266.

Killgerm Chemicals Ltd Tel:01924 268452 (Office hours). Emergency Number 01865407333

Non-medical professionals should seek information by contacting NHS by dialling 111.

SECTION 2: Hazards identification

2.1. Classification of the mixture according to Regulation (EC) No. 1272/2008 [CLP]

Repr. Tox. Cat 1A: H360D May damage the unborn child

STOT RE Cat 2: H373 May cause damage to organs through prolonged or repeated exposure

2.2. Label elements



GHS08

Signal Word: **Danger**

Hazard-determining components of labelling:

Brodifacoum

Hazard statements:

H360D: May damage the unborn child.

H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

P201: Obtain special instructions before use.

P202: Do Not handle until all safety precautions have been read and understood

P280: Wear protective gloves and clothing.

P308+P313: IF exposed or concerned: Get medical advice/attention.

P314: Get medical advice/attention of you feel unwell.

P405: Store Locked up.

P501: Dispose of contents/container to point authorized to receive hazardous waste

2.3. Other hazards

To be used only by professional users holding certification demonstrating compliance with UK rodenticide stewardship regime requirements.

Read the label before use. Using this product in a manner that is inconsistent with the label may be an offence. Refer to the CRRU UK Code of Best Practice (or equivalent) for guidance.

Results of PBT and vPvB assessment:

- Brodifacoum fulfils the P, B and T criteria.
- Brodifacoum fulfils the vP criterion.

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The mixture does not contain substances with endocrine disrupting properties in concentration equal to or greater than 0.1% by weight.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous Components in Product

Ingredient Name	Classification	Concentration
Starch CAS: 9005-25-8 EINECS: 232-679-6	Substance with a workplace exposure limit	10-20%
Flours dust	Substance with a workplace exposure limit	10-20%
Sucrose CAS: 57-50-1 EINECS: 200-334-9	Substance with a workplace exposure limit	5-10%
2,6-di-tert-butyl-p-cresol (BHT) CAS: 128-37-0 EINECS: 204-881-4 Reg.nr: 01-2119480433-40	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	<0.1%
Brodifacoum CAS No: 56073-10-0 EC No: 259-980-5 Index number: 607-172-00-1	Acute Tox. 1, H300 (ATE = 0.4 mg/kg bw); Acute Tox. 1, H310 (ATE = 3.16 mg/kg bw); Acute Tox. 1, H330 (ATE = 3.05 mg/m3); Repr. 1A, H360D; STOT RE 1, H372; Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10) Specific concentration limits: Repr. 1A; H360: C ≥ 0.003 % STOT RE 1; H372: C ≥ 0.02 % STOT RE 2; H373: 0.002 % ≤ C < 0.02 %	<0.005%
Silicon dioxide CAS: 7631-86-9 EINECS: 231-545-4 Reg.nr.: 01-2119379499-16	Nanoform: Spheroidal, amorphous nanoform	4.5%

See section 16 for full text of H phrases and hazard classification of ingredients.

SECTION 4: First aid measures

4.1. Description of first aid measures

General: If during or after use/exposure you begin to feel unwell, seek medical attention bringing a copy of the product label/the SDS.

Eye contact: Flush with clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, seek medical advice.

Skin contact: Remove all contaminated clothing. Wash with water and then with soap and water. If needed, seek medical advice.

Ingestion: DO NOT induce vomiting. Rinse mouth carefully with water. Never give anything by mouth to an unconscious person. If swallowed, seek medical advice immediately and show the product's container or label.

Inhalation: Remove from exposure. Get medical attention if any symptoms persist.

4.2. Most important symptoms and effects, both acute and delayed

This product contains an anticoagulant substance. If ingested, symptoms, which may be delayed, may include nosebleed and bleeding gums. In severe cases, there may be bruising and blood present in the faeces or urine. Antidote: Vitamin K1 administered by medical/veterinary personnel only.

4.3. Indication of any immediate medical attention and special treatment needed

The primary treatment are the antidote therapy and the clinical assessment. Antidote: Vitamin K1 (phytomenadione). The effectiveness of the treatment should be monitored by measuring the clotting time. Do not interrupt the treatment until the clotting time is back to normality and is stable.

Consult a Poison Control Centre.

UK medical professionals should contact the National Poisons Information Service (www.npis.org) for further advice.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing agents: Use water spray, foam, dry chemical, or carbon dioxide. Cool the smouldering material with water spray to minimise the possibility of re-ignition. Keep containers and surroundings cool with water spray.

Unsuitable agents: Water jet.

5.2. Special hazards arising from the substance or mixture

This product is non-flammable, but combustible. May produce toxic fumes of carbon monoxide if involved in a fire.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and appropriate protective equipment in accordance with EN469 European standards.

Fire residues and contaminated extinguishing media should be disposed according to current regulation. Do not allow extinguishing media to enter sewers, ground water or water courses. Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personnel dealing with accidental spills and release of the mixture should wear personal protective equipment described in section 8 under “spillage”.

6.2. Environmental precautions

Do not allow the product to get to the sewers, ground and surface waters. Do not rinse product to the sewers. In case of water contamination - inform appropriate authorities immediately.

6.3. Methods and material for containment and cleaning up

Sweep up spilled material carefully. Avoid raising dust. Place in marked receptacle ready for disposal. After cleaning up, ensure adequate ventilation. Contact supplier for advice on disposal and dispose of the material according to regulations. See also section 13.

6.4. Reference to other sections

See section 8 for protective clothing

See section 7 for safe handling

See section 13 for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

The product must be used in accordance with the product label. FOR USE ONLY BY PROFESSIONAL OPERATORS.
AVOID ALL CONTACT BY MOUTH.
PREVENT ACCESS TO BAIT by children, birds, and non-target animals particularly dogs, cats, pigs and poultry.
Remove rodent bodies at frequent intervals during treatment and collect and dispose the remains of bait after treatment.
HAZARDOUS TO WILDLIFE. DO NOT PLACE BAIT where food, feed or water could become contaminated.
WASH HANDS AND EXPOSED SKIN before meals and after use.
EMPTY CONTAINER COMPLETELY and dispose of safely.
When working in rodent infested areas it is recommended that synthetic rubber/PVC gloves be worn to protect against rodent borne disease.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry, cool, and well-ventilated place. Keep the container closed, and store away from direct sunlight.
Store in places inaccessible to children, birds, pets, and farm animals.
Protect from frost, humidity, and water. Do not store at temperatures above 35°C.

7.3. Specific end use(s)

See section 1.2.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace:	
9005-25-8 Starch	
WEL (Great Britain)	Long-term value: 10* 4** mg/m³ *total inhalable **respirable
Flours dust	
WEL (Great Britain)	Short-term value: 30 mg/m³ Long-term value: 10 mg/m³ Capable of causing occupational asthma.
57-50-1 sucrose	
WEL (Great Britain)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³
128-37-0 2,6-di-tert-butyl-p-cresol (BHT)	
WEL (Great Britain)	Long-term value: 10 mg/m³

-DNELs		
128-37-0 2,6-di-tert-butyl-p-cresol (BHT)		
Oral	Long term - systemic effects	0.25 mg/kg bw/d (general population)
Dermal	Long term - systemic effects	0.25 mg/kg bw/d (general population) 0.5 mg/kg bw/d (workers)
Inhalative	Long term - systemic effects	0.435 mg/m3 (general population) 1.76 mg/m3 (workers)

-PNECs		
128-37-0 2,6-di-tert-butyl-p-cresol (BHT)		
	PNEC	0.000199 mg/l (fresh water) 0.00199 mg/l (intermittent releases) 0.00002 mg/l (marine water) 0.17 mg/l (sewage treatment plant)
	PNEC	0.435 mg/kg (sediment dw) 0.046 mg/kg (sedimentdw) 0.054 mg/kg (soil) 16.67 mg/kg (Food)
56073-10-0 brodifacoum		
Oral	PNEC	0.0000128 mg/kg bw (bird) 0.000011 mg/kg bw (mammal)
	PNEC	0.00004 mg/l (aquatic organisms) >0.0038 mg/l (microorganisms)
	PNEC	>0.88 mg/kg ww (soil)

-Other exposure limit values		
56073-10-0 brodifacoum		
Oral	AEL - short term AEL - medium term AEL - long term	0.0000033 mg/kg bw/d 0.00000667 mg/kg bw/d 0.0000033 mg/kg bw/d

8.2. Exposure controls

Where exposure may occur engineering controls should be employed. A risk assessment should be carried out and the following PPE may be appropriate /required.

PPE	Item in use	Spillage
Respirators	Not needed under normal use.	Half mask respirator (EN140), plus P class filter (EN143) to required (nominal) protection factor (minimum).
Gloves	Protective Gloves to EN 374 e.g. Nitrile.	Protective Gloves to EN 374 e.g. Nitrile.
Overall	Basic type e.g. Heavy duty polycotton or coverall type 5/6.	Basic type e.g. Heavy duty polycotton or coverall type 5/6.
Goggles	Not needed under normal use.	Safety glasses to EN 166

General safety and hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	Blue/Green solid.
Odour:	Characteristic.
Odour threshold:	No data available.
pH:	6.7 (CIPAC MT 75.3 - 1% H_2O).
Melting point/freezing point:	Not applicable.
Initial boiling point/boiling range:	Not applicable.
Flash point:	Not applicable.
Evaporation rate:	Not applicable.
Flammability:	Not applicable
Upper/lower flammability or explosive limits:	No available data.
Vapor pressure:	Not applicable.
Vapor density:	Not applicable.
Relative density:	1.1788 g/mL (EU Method A.3)
Solubility(ies):	Water: Insoluble. – No information for other solvents.
Partition coefficient n-octanol/water (log Kow):	No available data.
Auto-ignition temperature:	No available data.
Decomposition temperature:	No available data.
Viscosity:	No available data.
Explosive properties:	None, no ingredients with explosive properties.
Oxidising properties:	None, no ingredients with oxidizing properties.

9.2 Other Information

No further relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Not reactive mixture

10.2. Chemical stability

Stable under recommended conditions of storage and handling.

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

Under standard handling and storing conditions, the product does not show any dangerous reaction.

10.5. Incompatible materials

Store only in original container.
Given the lack of information about possible incompatibilities with other substances, it is recommended not to use it in combination with other products.

10.6. Hazardous decomposition products

No dangerous decomposition products known under normal conditions of storage and use.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Classification of the product was conducted by calculation method according to regulation 1272/2008 based on the content of hazardous ingredients:

a) acute toxicity: Information has been derived from the properties of the individual ingredients.

LD/LC50 values relevant for classification:		
57-50-1 sucrose		
Oral	LD50	29700 mg/kg bw (rat)
128-37-0 2,6-di-tert-butyl-p-cresol (BHT)		
Oral	LD50	>2930 mg/kg bw (rat)
Dermal	LD50	>2000 mg/kg bw (rat) (OECD 402)
Inhalative	RD50	59.7 ppm (mouse) 30 min.
56073-10-0 brodifacoum		
Oral Dermal Inhalative	LD50 LD50 LC50/4h	0.4 mg/kg bw (male rat and mouse) 3.16 mg/kg bw (rat) 3.05 mg/m3 (rat)

b) Skin corrosion/irritation: Based on data available classification criteria are not met.

c) Serious eye damage/irritation: Based on data available classification criteria are not met.

d) respiratory or skin sensitisation: Based on data available classification criteria are not met.

e) Germ cell mutagenicity: Based on data available classification criteria are not met.

f) carcinogenicity: product does not contain any compounds with carcinogenic hazard.

g) reproductive toxicity:

128-37-0 2,6-di-tert-butyl-p-cresol (BHT)		
Oral	NOAEL - developmental toxicity NOAEL	100 mg/kg bw/d (rat) 500 mg/kg bw (rat)
56073-10-0 brodifacoum		
Developmental Toxicity	Clear developmental toxicity was not observed in rabbits or rats. However, as a precaution, Brodifacoum should be considered teratogenic to humans because it contains the same chemical moiety responsible for the teratogenicity of warfarin, a known human teratogenic agent, and it has the same mode of action that is a known mechanism of teratogenicity in humans.	

May damage the unborn child.

h) STOT- single exposure: Based on data available classification criteria are not met.

i) STOT- Repeated exposure:

128-37-0 2,6-di-tert-butyl-p-cresol (BHT)		
Oral	NOAEL	25 mg/kg bw/d (rat) Long-term exposure to BHT can result in functional and histological changes of lung, liver, kidneys, and thyroid. In case of chronic oral exposure, liver is the main target and thyroid is an indirect target. Doses above the NOAEL value result in thyroid iperactivity, enlargement of the liver, induction of several liver enzymes. Since the NOAEL derived from the chronic study is 25 mg/kg bw/d, the substance is not classified as "Specific target organ toxicity - repeated exposure".
56073-10-0 brodifacoum		
Oral	NOAEL	0.04 mg/kg bw/d (rat) The study reveals that repeated oral exposure results in toxic effects: prothrombin time prolongation, kaolin-caphalin time prolongation, haemorrhage. Based on the results of the acute dermal and inhalation toxicity studies and route-to-route extrapolation, it is justified to assume a similar concern for serious damage to health by prolonged exposure through dermal and inhalation routes also.

May cause damage to the blood through prolonged or repeated exposure.

j) aspiration: Based on data available classification criteria are not met.

11.2. Other Data

See section 2.3

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SECTION 12: Ecological information

12.1. Toxicity

Data derived from the active ingredients.

Aquatic and/or terrestrial toxicity:	
128-37-0 2,6-di-tert-butyl-p-cresol (BHT)	
EC50/21d	0.096 mg/l (daphnia magna) (OECD 211)
EC50/3h	>10000 mg/l (activated sludge)
EC50/72h	>0.24 mg/l (pseudokirchneriella subcapitata) (OECD 201)
EC50/24h	1.7 mg/l (Tetrahymena pyriformis) Based on growth inhibition.
IC50/72h	>0.4 mg/l (desmodesmus subspicatus)
LC0/96h	≥0.57 mg/l (danio rerio)
LC50/96h	1.1 mg/l (oryzias latipes)
NOEC/30d	0.053 mg/l (oryzias latipes) (OECD 210)
LOEC/30d	0.14 mg/l (oryzias latipes) (OECD 210)
NOEC/21d	0.069 mg/l (daphnia magna) (OECD 211)
NOEC/72h	0.24 mg/l (pseudokirchneriella subcapitata)
EC50/48h	0.48 mg/l (daphnia magna) (OECD 202)
56073-10-0 brodifacoum	
LC50/14d	(eisenia foetida) >994 mg/kg dry weight >879.6 mg/kg wet weight
ErC50/72h	0.04 mg/l (selenastrum capricornutum)
EC10/3h	>0.058 mg/l (activated sludge) Based on water solubility at pH 7 and T=20°C.
EC10/6h	>0.0038 mg/l (pseudomonas putida) Based on water solubility at pH 5.2 and T=20°C.
LC50/96h	0.042 mg/l (oncorhynchus mykiss)
LC50 (diet)	0.72 mg/kg food (laughing gull)
NOEC (reproductive toxicity)	0.0038 mg/kg food (bird)
NOEL (reproductive toxicity)	0.000385 mg/kg bw/d (bird)
LD50	0.31 mg/kg bw (mallard duck)
EC50/48h	0.25 mg/l (daphnia magna)

12.2. Persistence and degradability

128-37-0 2,6-di-tert-butyl-p-cresol (BHT)	
Biodegradation in water	4,5% (28 days, OECD 301C - Ready biodegradability: Modified MITI test). Not readily biodegradable.
56073-10-0 brodifacoum	
Biodegradability	Not easily biodegradable. – Brodifacoum will probably partition into sewage sludge/sediment due to its high log Kow and poor water solubility.
Photolytic half-life	0.083 days. Degrades rapidly by photolysis.
Hydrolytic half-life	>1 year. Stable at pH 5, 7 and 9.

12.3. Bio accumulative potential

128-37-0 2,6-di-tert-butyl-p-cresol (BHT)	
Bioaccumulation	An appreciable bioaccumulation potential is foreseeable.
56073-10-0 brodifacoum	
Bioconcentration factor	BCF fish = 35645 (calculated according to TGD eq. 75, using log Kow = 6.12). BCF earthworm = 15820 (calculated according to TGD ed. 82d, using log Kow = 6.12).
Octanol-water partition coefficient	log Kow = 6.12 (estimated from measured Koc).

12.4. Mobility in soil

56073-10-0 brodifacoum	
DT50	157 days. Persistent.
Organic carbon partition coefficient	Koc = 9155 l/kg (pH 7,1-7.6). Immobile in soil.
Soil mobility	Under basic conditions (high pH), Brodifacoum is not likely to be adsorbed onto soils or sewage sludge due to the ionisation of the molecule. Under acidic conditions (low pH), Brodifacoum is likely to be adsorbed onto soils or sewage sludge as the molecule is in its neutral or non-ionised form.

12.5. Results of PBT and vPvB assessment

PBT/vPvB	
56073-10-0 brodifacoum	
PBT	Brodifacoum fulfils the P, B and T criteria.
vPvB	Brodifacoum fulfils the vP criterion.

12.6. Other adverse effects

The major environmental concern of Brodifacoum is primary and secondary poisoning of non-target animals.
Hazardous to wildlife. Do not allow the product to reach ground water, water course or sewage system.
The mixture does not contain substances with endocrine disrupting properties in concentration equal to or greater than 0.1% by weight.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal of uneaten product, empty containers and contaminated packaging must be made in accordance with the local law. For information on disposal in the UK contact the environment agency (www.environment-agency.gov.uk) or SEPA (www.SEPA.org.uk).

Must not be disposed together with household garbage.

Dispose of unused product in the original container as hazardous waste.

Empty containers and contaminated PPE should be considered hazardous and disposed of appropriately.

Suggested European waste code 20 01 19(for unused product) 15 01 10 (for contaminated packaging).

SECTION 14: Transport information

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es).

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code.

Not applicable.

SECTION 15: Regulatory information

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

Labelling according to The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019
Control of Substances Hazardous to Health Regulations 2002 (as amended). -
The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020
• Restricted to trained professional users in the UK and professional users in Ireland.
• Refer to other relevant measures such as the Health and Safety at Work etc Act 1974 and the COSHH regulations and guidance.

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• The information contained in this data sheet does not constitute the user's own assessment of workplace risks as required by legislation.

Seveso category This product is not subject to Seveso directive dispositions.

REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

The mixture does not contain substances identified as POP.

LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

The product does not contain any substance included in annex XIV.

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 30, 75

Regulation (EU) No 649/2012 (PIC) There are no substances listed in this regulation.

REGULATION (EU) 2019/1148 - Explosive precursors

The mixture does not contain explosives precursors in concentrations equal to or greater than 1%.

Authorisation holder: ARROW REGULATORY LIMITED - 149-155 CANAL STREET, NOTTINGHAM, NG1 7HR, UK

Authorisation n° GB-2016-1041-0004

Substances of very high concern (SVHC) according to REACH, Article 59

The mixture does not contain SVHC substances in concentration equal to or greater than 0.1% by weight.

Regulation (EC) n. 1005/2009: substances that deplete the ozone layer

The mixture does not contain substances that deplete the ozone layer.

Regulation (EC) n. 850/2004: persistent organic pollutants None.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

Use only in accordance with label instructions. Operatives using this product should be trained in its use.

The information in this data sheet should be considered when undertaking a risk assessment under the COSHH regulations.

Ingredient classification data:

Acute Toxicity category 1 (Oral)	H300: Fatal if swallowed
Acute Toxicity category 1 (Dermal)	H310: Fatal in contact with skin
Acute Toxicity category 2 (Inhalation)	H330: Fatal if Inhaled.
Reproductive Toxicity category 1A	H360D: May damage the unborn child
Specific Target Organ Toxicity repeat exposure category 1	H372: Causes damage to organs through prolonged or repeated exposure
Aquatic Acute category 1	H400: Very toxic to aquatic life.
Aquatic Chronic category 1	H410: Very toxic to aquatic life with long lasting effects.

Issue number (date)	Section amended
Issue (Jan2022)	First creation.
Issue (Apr 2024)	Updated emergency number and signal word. Updates to sections 3.2, 8.1, 15 and 16. Minor updates to wording.

This safety data sheet does not constitute a COSHH assessment.

The information contained within this data sheet is strictly for general guidance only and should not be relied upon over and above this. This data sheet is intended to provide general health and safety guidance on the handling, storage and transportation of the preparation. The information provided in this data sheet is accurate at the date of publication and will be updated as and when appropriate. No liability will be accepted by Killgerm Chemicals Limited for any loss, injury or damage arising from any failure to comply with the information and advice contained within this data sheet and/or failure to comply with the manufacturer's guidelines, product label data and any associated technical usage literature.