



## SAFETY DATA SHEET

Rugby 3 GR

SDS #: 6145-A

Revision date: 2022-06-27

Format: AP

Version 2.1

### Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Rugby 3 GR
Product Code(s)	6145-A
Synonyms	CADUSAFOS: S,S-di-sec-butyl O-ethyl phosphorodithioate (IUPAC name); O-ethyl S,S-bis(1-methylpropyl) phosphorodithioate (CAS Name) Microcrystalline cellulose (INCI Name): MCC, cellulose gel Xanthan Gum
Formula code	6145
Active Ingredient(s)	Cadusafos
Chemical Family	Organophosphate Pesticide
Recommended Use:	Insecticide, Nematicide
Restrictions on Use:	Use as recommended by the label.
Manufacturer/Supplier	FMC Corporation 2929 Walnut Street Philadelphia, PA 19104 (215) 299-6000 (General Information) SDS-Info@fmc.com (E-Mail General Information)
Emergency telephone	Medical Emergencies: 0800 140 1447 For leak, fire, spill or accidents: 001-803-017-9114 (CHEMTREC Indonesia) 1 703 741-5970 (CHEMTREC – International)

### Section 2: HAZARDS IDENTIFICATION

#### GHS Classification

Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 1
STOT - single exposure	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

#### Label Elements



Signal Word:

**Danger****Hazard Statements**

H312 - Harmful in contact with skin

H330 - Fatal if inhaled

H370 - Causes damage to organs

H372 - Causes damage to organs through prolonged or repeated exposure

H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P273 - Avoid release to the environment

**Precautionary Statements - Response**

P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor

P321 - Specific treatment (see supplemental first aid instructions on this label)

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap

P312 - Call a POISON CENTER or doctor if you feel unwell

P363 - Wash contaminated clothing before reuse

P391 - Collect spillage

**Precautionary Statements - Storage**

P405 - Store locked up

**Precautionary Statements - Disposal**

P501 - Dispose of contents/container to an approved waste disposal plant

**Other Information**

• Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ignitable or explosive. Minimize airborne dust generation and eliminate sources of ignition.

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms** CADUSAFOS: S,S-di-sec-butyl O-ethyl phosphorodithioate (IUPAC name); O-ethyl S,S-bis(1-methylpropyl) phosphorodithioate (CAS Name) Microcrystalline cellulose (INCI Name): MCC, cellulose gel Xanthan Gum

Chemical name	CAS-No	Weight %
2-Methylnaphthalene	91-57-6	<1
Cadusafos	95465-99-9	3.3
Naphtha (petroleum), heavy aromatic	64742-94-5	<1
1-Methylnaphthalene*	90-12-0	<1

### Section 4: FIRST AID MEASURES

**Inhalation**

Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**Skin Contact**

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.

<b>Eye Contact</b>	Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not induce vomiting or give anything by mouth to an unconscious person.
<b>Most important symptoms and effects, both acute and delayed</b>	Asthma-like and/or skin allergy-like symptoms.
Use personal protective equipment. See Section 8 for more detail.	
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	This product contains a reversible cholinesterase inhibitor. Atropine sulfate is antidotal. Support respiration as needed with removal of secretions, maintenance of a patent airway and, if necessary, artificial ventilation. If cyanosis is absent: Adults - start treatment by giving 2 mg atropine intravenously or intramuscularly, if necessary, and repeat with 0.4 - 2.0 mg atropine at 15 minute intervals until atropinization occurs (tachycardia, flushed skin, dry mouth, mydriasis); Children under 12 - initial dose = 0.05 mg/kg body weight and repeat dose = 0.02 - 0.05 mg/kg body weight. Start 2-PAM at the same time, following manufacturer's recommended dosages and administration. Morphine, reserpine, phenothiazines and theophylline are probably contraindicated. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Observe patient to ensure that these symptoms do not recur as atropinization wears off. If in eyes, instill one drop of homatropine. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

## Section 5: FIRE FIGHTING MEASURES

<b>Flammable properties</b>	Powdered material may form explosive dust-air mixtures.
<b>Suitable Extinguishing Media</b>	Foam. Carbon dioxide (CO <sub>2</sub> ). Dry powder. Water spray.
<b>Unsuitable extinguishing media</b>	No information available
<b>Specific Hazards Arising from the Chemical</b>	Slightly combustible. May support combustion at elevated temperatures. Finely dispersed particles can form explosive mixtures in air.
<b>Protective equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus and full protective gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
<b>Methods for Containment</b>	Use a wet sweeping compound or water to prevent dust formation.
<b>Methods for cleaning up</b>	Sweep up and shovel into suitable containers for disposal. Clean and neutralize spill area, tools and equipment by washing with water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.

## Section 7: HANDLING AND STORAGE

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Keep/store only in original container.
<b>Materials to avoid</b>	None known

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits

**Engineering measures** Ensure adequate ventilation, especially in confined areas.

### Personal protective equipment

**Respiratory Protection** For dust, splash, mist or spray exposures wear a elastomeric full-face or half mask respirator with appropriate cartridges and/or filters which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization).

**Hand Protection** Protective gloves.

**Eye/Face Protection** For dust, splash, mist or spray exposure, wear chemical protective goggles.

**Skin and Body Protection** Wear long-sleeved shirt, long pants, socks, and shoes.

**Hygiene measures** Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Dry powder
<b>Appearance</b>	Granules
<b>Odor</b>	Slight mercaptan
<b>Color</b>	Gray
<b>Odor threshold</b>	No information available
<b>pH</b>	6-8
<b>Melting point/freezing point</b>	No information available
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	No information available
<b>Solubility(ies)</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	No information available
<b>Molecular weight</b>	No data available
<b>Relative density</b>	No information available
<b>Bulk density</b>	0.8
<b>K<sub>st</sub></b>	>0 bar m/s

## Section 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Not applicable
<b>Stability</b>	Stable under recommended storage conditions
<b>Hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Excessive heat, Extreme risk of explosion by shock, friction, fire or other sources of ignition.
<b>Incompatible products</b>	No information available.
<b>Hazardous Decomposition Products</b>	Carbon oxides (COx), Phosphorous oxides, Sulfur dioxide.

## Section 11: TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Numerical measures of toxicity - Product Information

<b>LD50 Oral</b>	> 5,000 (rat) mg/kg
<b>LD50 Dermal</b>	> 2,000 mg/kg (rat)
<b>LC50 Inhalation (dust)</b>	Cadusafos: 0.026 mg/L (4-hr) (rat)

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation (vapor)
Silica, amorphous, fumed (112945-52-5)	= 3160 mg/kg ( Rat )		
1,6-hexanediamine (124-09-4)	= 750 mg/kg ( Rat )	= 1110 mg/kg ( Rabbit )	
sodium acetate (127-09-3)	= 3530 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 30 g/m <sup>3</sup> ( Rat ) 1 h
Sodium Hydroxide (1310-73-2)	= 325 mg/kg ( Rat )	= 1350 mg/kg ( Rabbit )	
Copper naphthenate (1338-02-9)	= 2 g/kg ( Rat )	> 2000 mg/kg ( Rabbit )	
FD&C yellow 5 (1934-21-0)	> 2000 mg/kg ( Rat )		
Dipropylene glycol (25265-71-8)	= 14850 mg/kg ( Rat )	> 20 mL/kg ( Rabbit )	
1,2 benzisothiazolin-3-one (2634-33-5)	= 1020 mg/kg ( Rat )		
FD & C Blue No.1 (3844-45-9)	> 2 g/kg ( Rat )		
Urea (57-13-6)	= 8471 mg/kg ( Rat )		
Solvent Blend (64742-88-7)	> 25 mL/kg ( Rat )	> 3000 mg/kg ( Rabbit )	> 13 mg/L ( Rat ) 4 h
Polyvinyl Alcohol (9002-89-5)	= 23854 mg/kg ( Rat ) > 20 g/kg ( Rat )		
Microcrystalline cellulose (9004-34-6)	> 5 g/kg ( Rat )	> 2 g/kg ( Rabbit ) > 2000 mg/kg ( Rabbit )	> 5800 mg/m <sup>3</sup> ( Rat ) 4 h
Methylene diphenyl diisocyanate (polymeric) (9016-87-9)	= 49 g/kg ( Rat )	> 9.4 g/kg ( Rabbit ) > 9400 mg/kg ( Rabbit )	= 490 mg/m <sup>3</sup> ( Rat ) 4 h
Naphthalene sulfonic acid-formaldehyde condensate, sodium salt (9084-06-4)	= 3800 mg/kg ( Rat )		
Naphthalene* (91-20-3)	= 1110 mg/kg ( Rat ) = 490 mg/kg ( Rat )	= 1120 mg/kg ( Rabbit ) > 20 g/kg ( Rabbit )	> 340 mg/m <sup>3</sup> ( Rat ) 1 h

Methyl alcohol (67-56-1)	= 6200 mg/kg ( Rat )	= 15800 mg/kg ( Rabbit ) = 15840 mg/kg ( Rabbit )	= 22500 ppm ( Rat ) 8 h = 64000 ppm ( Rat ) 4 h
Phosphoric acid (7664-38-2)	> 2000 mg/kg (rat)	= 2740 mg/kg (rabbit)	> 850 mg/m <sup>3</sup> (rat) 1 h
Sodium sulfate (7757-82-6)	> 10000 mg/kg ( Rat )		
Methyl acetate (79-20-9)	> 5 g/kg ( Rat )	> 5 g/kg ( Rabbit )	> 49000 mg/m <sup>3</sup> ( Rat ) 4 h
Naphtha (petroleum), heavy aromatic (64742-94-5)	300-2000 mg/kg	> 2 mL/kg ( Nyúl )	>5,2 mg/L
1-Methylnaphthalene* (90-12-0)	= 1840 mg/kg ( Rat )		

**Skin corrosion/irritation**

Non-irritating during normal use (rabbit).

**Serious eye damage/eye irritation**

Slight irritation (rabbit).

**Sensitization**

It is not expected to be non-sensitizing to the skin based on the components.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Mutagenicity**

Cadusafos: Not genotoxic in laboratory studies.

**Carcinogenicity**

Cadusafos: No evidence of carcinogenicity from animal studies.

**Reproductive toxicity**

Cadusafos: No toxicity to reproduction in animal studies.

**Developmental toxicity**

Cadusafos: Not teratogenic in animal studies.

**STOT - single exposure**

Causes damage to organs. See listed target organs below.

**STOT - repeated exposure**

Causes damage to organs through prolonged or repeated exposure. See listed target organs below.

**Chronic toxicity**

Cadusafos: Prolonged exposure caused inhibition of red blood cell and brain cholinesterase, and decreased motor activity.

**Target organ effects****Neurological effects**Central Nervous System (CNS), Peripheral Nervous System (PNS),  
Cadusafos: Chronic exposure to animals caused decreased motor activity and decreased cholinesterase activity in brain, red blood cells and plasma.**Aspiration hazard**

No information available.

**Section 12: ECOLOGICAL INFORMATION****Ecotoxicity**

The environmental impact of this product has not been fully investigated.

Very toxic to aquatic life with long lasting effects.

<b>Cadusafos (95465-99-9)</b>				
Active Ingredient(s)	Duration	Species	Value	Units
Cadusafos	48 h EC50	Crustacea	1.6	µg/L
	96 h LC50	Fish	0.13	mg/L
	72 h EC50	Algae	4.3	mg/L
	21 d NOEC	Crustacea	0.23	µg/L
	21 d NOEC	Fish	5.2	µg/L
	96 h NOEC	Algae	1.0	mg/L
	LD50	Bobwhite quail	16.1	mg/kg
	LC50, contact	Apis mellifera	1.80	µg/bee
	LC50, oral	Apis mellifera	2.07	µg/bee

**Persistence and degradability**

Cadusafos: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.

<b>Bioaccumulation</b>	Cadusafos: The substance does not have a potential for bioconcentration.
<b>Mobility</b>	Cadusafos: Moderately mobile; Has some potential to reach groundwater.
<b>Other Adverse Effects</b>	No information available.

### Section 13: DISPOSAL CONSIDERATIONS

<b>Waste disposal methods</b>	Dispose of in accordance with local regulations.
<b>Contaminated containers and packages</b>	Dispose of in accordance with federal, state and local regulations.

### Section 14: TRANSPORT INFORMATION

#### IMDG/IMO

<b>UN/ID no</b>	UN3077
<b>Proper Shipping Name</b>	Environmentally hazardous substance, solid, n.o.s.(Cadusafos)
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>EmS No.</b>	F-A, S-F
<b>Special Provisions</b>	179, 274, 335, 909

#### ICAO/IATA

<b>UN/ID no</b>	UN3077
<b>Proper Shipping Name</b>	Environmentally hazardous substance, solid, n.o.s. (Cadusafos)
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>Special Provisions</b>	A97, A158

### Section 15: REGULATORY INFORMATION

#### International Inventories

A food, food additive, drug, cosmetic, or device, when manufactured, processed or distributed in commerce for use as a food, food additive, drug, cosmetic, or device may not be subject to local notification requirements. Check local regulations for more information.

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Cadusafos 95465-99-9						X		
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X
1-Methylnaphthalene* 90-12-0	X	X	X	X	X	X	X	X

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

## Section 16: OTHER INFORMATION

Prepared By: FMC Corporation

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Revision note: SDS sections updated.

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**End of Safety Data Sheet**