



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

1/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name TRIBUTE™ TOTAL

Product code (UVP) 80192401

SDS Number 102000025052

EPA Registration No. 432-1519

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

Use Herbicide

Restrictions on use See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

Emergency Telephone
Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity (Inhalation): Category 4

Eye irritation : Category 2B



Signal word: Warning

Hazard statements

Harmful if inhaled.

Causes eye irritation.

Precautionary statements

Avoid breathing dust, mist, spray.

Use only outdoors or in a well-ventilated area.



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

2/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Wash thoroughly after handling.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.

Other hazards

Dust may form explosive mixture in air.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Halosulfuron-Methyl	100784-20-1	30.80
Foramsulfuron	173159-57-4	19.80
Thiencarbazone-methyl	317815-83-1	9.91
Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5	8.80
Anionic tenside		4.00

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move the victim to fresh air and keep at rest. Call a physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Eye contact	Hold eye 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 eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms No symptoms known or expected.

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

3/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or mixture In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Nitrogen oxides (NOx), Sulphur oxides

Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.

Keep out of smoke. Fight fire from upwind position.

Flash point not applicable

Autoignition temperature no data available

Lower explosion limit not applicable

Upper explosion limit not applicable

Explosivity no data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

4/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Avoid dust formation. For personal protection see section 8.

Advice on protection against fire and explosion Dust may form explosive mixture in air. Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Protect from frost. Keep away from direct sunlight.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Thiocarbazone-methyl	317815-83-1	10 mg/m3 (OES BCS)		OES BCS*
Foramsulfuron	173159-57-4	10 mg/m3 (TWA)		OES BCS*
Kaolin (Respirable fraction.)	1332-58-7	2 mg/m3 (TWA)	02 2012	ACGIH
Kaolin (Total)	1332-58-7	10 mg/m3 (REL)	2010	NIOSH
Kaolin (Respirable.)	1332-58-7	5 mg/m3 (REL)	2010	NIOSH
Kaolin (Total dust.)	1332-58-7	15 mg/m3 (PEL)	02 2006	OSHA Z1
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (PEL)	02 2006	OSHA Z1
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	1989	OSHA Z1A



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

5/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	1989	OSHA Z1A
Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Particulate.)	1332-58-7	2ug/m3 (AN ESL)	02 2013	TX ESL
Kaolin (Particulate.)	1332-58-7	20ug/m3 (ST ESL)	02 2013	TX ESL
Kaolin (Respirable dust.)	1332-58-7	2 mg/m3 (TWA PEL)	08 2010	US CA OEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Goggles

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	beige
Physical State	water-dispersible granules
Odor	characteristic
Odour Threshold	no data available
pH	4.5 - 5.5 at 10 % (23 °C) (deionized water)
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Bulk density	0.559 - 0.656 g/ml (loose)



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

6/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Evaporation rate	not applicable
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	dispersible
Minimum Ignition Energy	no data available
Decomposition temperature	from 105 °C , Heating rate: 0.05 K/min Determined in glass.
Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available
Other information	The product is capable of dust explosions.

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	from 105 °C, Heating rate: 0.05 K/min Determined in glass.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Store only in the original container.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Ingestion, Eye contact, Skin contact
Immediate Effects	



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

7/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Eye Moderate eye irritation.

Ingestion Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity LD50 (rat) 3,129 mg/kg

Acute inhalation toxicity LC50 (rat) > 2.02 mg/l
Exposure time: 4 h
Determined in the form of a respirable aerosol.

Acute dermal toxicity LD50 (rat) > 5,000 mg/kg

Skin irritation Slight irritation (rabbit)

Eye irritation Slight irritation (rabbit)

Sensitisation Non-sensitizing. (guinea pig)

Repeated dose toxicity
Chronic toxicity

Assessment repeated dose toxicity

Halosulfuron-methyl did not cause specific target organ toxicity in experimental animal studies.
Thiencarbazone-methyl did not cause specific target organ toxicity in experimental animal studies.
Foramsulfuron did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Halosulfuron-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Foramsulfuron was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Halosulfuron-methyl was not carcinogenic in lifetime feeding studies in rats and mice.
Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. Thiencarbazone-methyl caused at high dose levels an increased incidence of tumours in mice in the following organ(s): urinary bladder. The tumours seen with Thiencarbazone-methyl were caused through the chronic irritation due to the presence of bladder stones.
Foramsulfuron was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

8/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Assessment toxicity to reproduction

Halosulfuron-methyl did not cause reproductive toxicity in a two-generation study in rats.
Thiencarbazone-methyl did not cause reproductive toxicity in a two-generation study in rats.
Foramsulfuron did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Halosulfuron-methyl caused developmental toxicity only at dose levels toxic to the dams. Halosulfuron-methyl caused an increased incidence of non-specific malformations.
Thiencarbazone-methyl did not cause developmental toxicity in rats and rabbits.
Foramsulfuron did not cause developmental toxicity in rats and rabbits.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) > 100 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient foramsulfuron.

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) > 104 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient thiencarbazone-methyl.

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) > 131 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient halosulfuron-methyl.

Toxicity to aquatic invertebrates

LC50 (*Daphnia*) > 100 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient foramsulfuron.

EC50 (Water flea (*Daphnia magna*)) > 98.6 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient thiencarbazone-methyl.

EC50 (Water flea (*Daphnia magna*)) > 107 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient halosulfuron-methyl.

Toxicity to aquatic plants

EC50 (*Pseudokirchneriella subcapitata*) 75 mg/l
Exposure time: 72 h
The value mentioned relates to the active ingredient foramsulfuron.



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

9/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

	IC50 (<i>Pseudokirchneriella subcapitata</i>) 1.017 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient thien carbazone-methyl.
	IC50 (<i>Lemna gibba</i> (duckweed)) 0.00131 mg/l Growth rate; Exposure time: 7 d The value mentioned relates to the active ingredient thien carbazone-methyl.
	EC50 (<i>Lemna gibba</i> (duckweed)) 0.000217 mg/l Growth rate; Exposure time: 7 d The value mentioned relates to the active ingredient halosulfuron-methyl.
Biodegradability	Halosulfuron-methyl: ; not rapidly biodegradable Thien carbazone-methyl: ; not rapidly biodegradable Foramsulfuron: ; not rapidly biodegradable
Koc	Halosulfuron-methyl: Koc: 113 Thien carbazone-methyl: Koc: 100 Foramsulfuron: Koc: 38 - 151
Bioaccumulation	Halosulfuron-methyl: ; Does not bioaccumulate. Thien carbazone-methyl: ; Does not bioaccumulate. Foramsulfuron: ; Does not bioaccumulate.
Mobility in soil	Halosulfuron-methyl: Moderately mobile in soils Thien carbazone-methyl: Moderately mobile in soils Foramsulfuron: Mobile in soils
Additional ecological information	No other effects to be mentioned.
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Drift or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Contaminated packaging Do not re-use empty containers.
Triple rinse containers.



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

10/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.

RCRA Information

Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR Not dangerous goods / not hazardous material

IMDG

UN number **3077**
Class 9
Packaging group III
Marine pollutant YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIENCARBAZONE-METHYL, HALOSULFURON-METHYL MIXTURE)

IATA

UN number **3077**
Class 9
Packaging group III
Environm. Hazardous Mark YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIENCARBAZONE-METHYL, HALOSULFURON-METHYL MIXTURE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1519

US Federal Regulations

TSCA list

Naphthalene and alkyl naphthalene 68425-94-5
sulphonic acids formaldehyde condensate, sodium salt

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

11/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

None.

Canadian Regulations

Canadian Domestic Substance List

Naphthalene and alkyl naphthalene 68425-94-5
sulphonic acids formaldehyde
condensate, sodium salt

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed.
Moderate eye irritation.
Avoid contact with skin, eyes and clothing.
Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

Bayer Environmental Science

SAFETY DATA SHEET



TRIBUTE™ TOTAL

Version 2.0 / USA
102000025052

12/12
Revision Date: 08/21/2014
Print Date: 06/21/2016

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 1 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 08/21/2014

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