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

1.1 Product identifier

Trade name	PACIFICA
Product code (UVP)	06372880

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

Use	Herbicide

1.3 Details of the supplier of the safety data sheet

Supplier	Bayer CropScience Limited 230 Cambridge Science Park Milton Road Cambridge Cambridgeshire CB4 0WB United Kingdom
Telephone	+44(0)1223 226500
Telefax	+44(0)1223 426240
Responsible Department	Email: ukinfo@bayercropscience.com

1.4 Emergency telephone no.

Emergency telephone no.	0800-220876 (UK 24 hr) +44(0)1635-563000 (Overseas 24 hr)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Serious eye damage: Category 1
H318 Causes serious eye damage.

Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1
H410 Very toxic to aquatic life with long lasting effects.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xi Irritant, R41
R66
N Dangerous for the environment, R50/53

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Mesosulfuron-methyl
- Iodosulfuron-methyl-sodium
- Mefenpyr-diethyl

Signal word: Danger

Hazard statements

H318	Causes serious eye damage.
H410	Very toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains fatty alcohol ethoxylate alkyl ether. May produce an allergic reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician.
P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Water dispersible granules (WG)
Iodosulfuron-methyl-sodium/Mesosulfuron-methyl/Mefenpyr-diethyl 1:3:9 % w/w

Hazardous components

R-phrase(s) according to EC directive 67/548/EEC
Hazard statements according to Regulation (EC) No. 1907/2006

Name	CAS-No. / EC-No.	Classification		Conc. [%]
		EC Directive 67/548/EEC	Regulation (EC) No 1272/2008	
Mesosulfuron-methyl, sodium salt	208465-19-4 606-652-8	N; R50/53	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	3.00
Iodosulfuron-methyl-sodium	144550-36-7	N; R50/53	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	0.98
Mefenpyr-diethyl	135590-91-9 603-923-2	Not classified	Not classified	9.20
Naphthalene and alkyl naphthalene sulphonic acids	68425-94-5 614-476-8	Xi; R36/38	Skin Irrit. 2, H315 Eye Irrit. 2, H319	> 5.00 – < 10.00

formaldehyde condensate, sodium salt				
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5 265-198-5	Xn; R65 R66 N; R51/53	Asp. Tox. 1, H304 Aquatic Chronic 2, H411	> 1.00 – < 25.00
Tetrapropylene benzene sulfonate, calcium salt	11117-11-6 234-360-7	Xn; R21 Xi; R38, R41 R52/53	Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412	> 1.00 – < 5.00
Fatty alcohol ethoxylate alkyl ether	345642-79-7	Xi; R38, R41 R43 N; R51/53	Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 2, H411	> 1.00
Kaolin	1332-58-7 310-194-1	Not classified	Not classified	> 1.00
Silica, amorphe	7631-86-9 231-545-4	Not classified	Not classified	> 1.00

Further information

Mesosulfuron-methyl, sodium salt	208465-19-4	M-Factor: 1,000 (acute)
Iodosulfuron-methyl-sodium	144550-36-7	M-Factor: 1,000 (acute)

For the full text of the R-phrases/ Hazard statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Victim to lie down in the recovery position, cover and keep him warm. Remove contaminated clothing immediately and dispose of safely.

Skin contact Wash off immediately with polyethylene glycol 400, then with plenty of water. If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Rinse mouth, ingest activated charcoal. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment Treat symptomatically. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable	Water spray, Foam, Dry powder, Carbon dioxide (CO2)
Unsuitable	High volume water jet
5.2 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), Hydrogen iodide (HI), Sulphur oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters

Special protective equipment for fire-fighters	In the event of fire, wear self-contained breathing apparatus.
Further information	Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions	Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.
6.2 Environmental precautions	Do not allow to get into surface water, drains and ground water. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Use mechanical handling equipment. Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.
6.4 Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.
Advice on protection against fire and explosion	Avoid dust formation by friction.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be

destroyed (burnt).

7.2 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.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	FIBC-PP (Polypropylen; approx.1000 l)
7.3 Specific end uses	Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Mesosulfuron-methyl, sodium salt	208465-19-4	10 mg/m3 (TWA)		OES BCS*
Iodosulfuron-methyl-sodium	144550-36-7	1 mg/m3 (TWA)		OES BCS*
Mefenpyr-diethyl	135590-91-9	10 mg/m3 (OES BCS)		OES BCS*
Kaolin (Respirable dust.)	1332-58-7	2 mg/m3 (TWA)	12 2011	EH40 WEL
Silica, amorphe (Inhalable dust.)	7631-86-9	6 mg/m3 (TWA)	12 2011	EH40 WEL
Silica, amorphe (Respirable dust.)	7631-86-9	2.4 mg/m3 (TWA)	12 2011	EH40 WEL

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

Additional advice

Observe: Exposure Limits In Air, Group 3: 100 mg/m³/ 20 ppm. (aromatic-rich hydrocarbon mixes with > 25% aromatics TRGS 901, No. 72).

8.2 Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004). Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

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	Wear respirator with a particle filter mask (protection factor 4) conforming to European norm EN149FFP1 or equivalent. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection	Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.
Eye protection	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
Skin and body protection	Wear standard coveralls and Category 3 Type 5 suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	water-dispersible granules
Colour	brown
Odour	aromatic
pH	8.0 - 9.6 at 10 % (23 °C) (deionized water)
Bulk density	672 - 788 kg/m3
Water solubility	dispersible
Partition coefficient: n-octanol/water	Mesosulfuron-methyl: log Pow: -0.48 Iodosulfuron-methyl-sodium: log Pow: -0.7 Mefenpyr-diethyl: log Pow: 3.83 at 21 °C
Impact Sensitivity	Not impact sensitive.
Combustion number	CN2 Short flaring without spreading
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
Dust content	nearly dust-free
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.

10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (rat) > 2,000 mg/kg
Acute inhalation toxicity	Not relevant because of low dust formation.
Acute dermal toxicity	LD50 (rat) > 5,000 mg/kg
Skin irritation	Slight irritant effect - does not require labelling. (rabbit)
Eye irritation	Severe eye irritation. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig) OECD Test Guideline 406, Buehler test

Assessment repeated dose toxicity

Mesosulfuron-methyl did not cause specific target organ toxicity in experimental animal studies.
Iodosulfuron-methyl-sodium did not cause specific target organ toxicity in experimental animal studies.
Mefenpyr-diethyl did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Mesosulfuron-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Iodosulfuron-methyl-sodium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Mefenpyr-diethyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Mesosulfuron-methyl was not carcinogenic in lifetime feeding studies in rats and mice.
Iodosulfuron-methyl-sodium was not carcinogenic in lifetime feeding studies in rats and mice.
Mefenpyr-diethyl was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Mesosulfuron-methyl did not cause reproductive toxicity in a two-generation study in rats.
Iodosulfuron-methyl-sodium did not cause reproductive toxicity in a two-generation study in rats.
Mefenpyr-diethyl did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Mesosulfuron-methyl did not cause developmental toxicity in rats and rabbits.
Iodosulfuron-methyl-sodium did not cause developmental toxicity in rats and rabbits.
Mefenpyr-diethyl caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Mefenpyr-diethyl are related to maternal toxicity.

Further information

Information given is based on data obtained from similar substances.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Rainbow trout (Oncorhynchus mykiss)) 7.5 mg/l Exposure time: 96 h
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) 13.1 mg/l Exposure time: 48 h
Toxicity to aquatic plants	EC50 (Pseudokirchneriella subcapitata) > 3.2 mg/l Growth rate; Exposure time: 72 h
	EC50 (Lemna gibba (duckweed)) 0.62 µg/l Exposure time: 7 d The value mentioned relates to the active ingredient mesosulfuron-methyl.
	EC50 (Lemna gibba (duckweed)) 0.81 mg/l Exposure time: 14 d The value mentioned relates to the active ingredient iodosulfuron-methyl-sodium.
	EC50 (Lemna gibba (duckweed)) > 12 mg/l Exposure time: 7 d The value mentioned relates to the active ingredient mefenpyr-diethyl.

12.2 Persistence and degradability

Biodegradability	Mesosulfuron-methyl: not rapidly biodegradable Iodosulfuron-methyl-sodium: not rapidly biodegradable Mefenpyr-diethyl: not rapidly biodegradable
Koc	Mesosulfuron-methyl: Koc: 92 Iodosulfuron-methyl-sodium: Koc: 45 Mefenpyr-diethyl: Koc: 625

12.3 Bioaccumulative potential

Bioaccumulation	Mesosulfuron-methyl: Does not bioaccumulate. Iodosulfuron-methyl-sodium: Does not bioaccumulate. Mefenpyr-diethyl: Bioconcentration factor (BCF) 232 Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil	Mesosulfuron-methyl: Moderately mobile in soils Iodosulfuron-methyl-sodium: Mobile in soils Mefenpyr-diethyl: Slightly mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Mesosulfuron-methyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Iodosulfuron-methyl-sodium: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Mefenpyr-diethyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information	Information given is based on data obtained from similar substances.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).
Contaminated packaging	Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times. Add washings to sprayer at time of filling. Dispose of empty and cleaned packaging safely. Large containers (> 25 l or > 25 kg) should not be rinsed or re-used for any other purpose. Return large containers to supplier. Follow advice on product label and/or leaflet.
Waste key for the unused product	**020108** agrochemical waste containing dangerous substances

SECTION 14: TRANSPORT INFORMATION

ADR/RID/ADN

14.1 UN number	**3077**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IODOSULFURON-METHYL SODIUM, MESOSULFURON-METHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	90
Tunnel Code	E

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number	**3077**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IODOSULFURON-METHYL SODIUM, MESOSULFURON-METHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9

14.4 Packing group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	**3077**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IODOSULFURON-METHYL SODIUM, MESOSULFURON-METHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

UK 'Carriage' Regulations

14.1 UN number	**3077**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IODOSULFURON-METHYL SODIUM, MESOSULFURON-METHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Emergency action code	2Z

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

UK and Northern Ireland Regulatory References

This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed.

Transport

Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348)
Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No 2367)
Air Navigation Dangerous Goods Regulations 2002 (SI 2002 No 2786)

Supply and Use

Chemical (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No 716)
Chemical (Hazard Information and Packaging for Supply) (Northern Ireland) Regulations 2009
Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No 2677)
EH40 Occupational Exposure Limits - Table 1 List of approved workplace exposure limits
Control of Pesticide Regulations 1986
Dangerous Substances and Explosive Atmospheres Regulations 2002

Waste Treatment

Environmental Protection Act 1990, Part II
Environmental Protection (Duty of Care) Regulations 1991
The Waste Management Licensing Regulations 1994 (as amended)
Hazardous Waste Regulations 2005 (Replacing Special Waste Regulations 1996 as amended)
Landfill Directive
Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94)
Water Resources Act 1991
Anti-Pollution Works Regulations 1999

Further information

WHO-classification: III (Slightly hazardous)

15.2 Chemical Safety Assessment

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Text of R-phrases mentioned in Section 3

R21	Harmful in contact with skin.
R36/38	Irritating to eyes and skin.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

Text of the hazard statements mentioned in Section 3

H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The above information is intended to give general health and safety guidance on the storage and transport of the product.
It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with.
The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.

The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.
No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

Reason for Revision: Section 12. Ecological information. Safety Data Sheet according to Regulation (EU) No. 453/2010.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.