Safety Data Sheet

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)

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

1.1. Product identifier

Product name	BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)	
Product code	SAP-10067516	
Synonyms	- BONVIVA Prefilled Syringes 3 mg/3 ml - Boniva	*1

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

Use	- pharmaceutical active substance (postmenopausal osteoporosis)	*1

1.3. Details of the supplier of the safety data sheet

Company information	Enquiries: Genentech, Inc. 1 DNA Way South San Francisco USA-CA 94080 United States of America Phone 001-(650) 225-1000 E-Mail info.sds@roche.com US Chemtrec phone: (800)-424-9300	Local representation:

1.4. Emergency telephone number

Emergency telephone number	US Chemtrec phone: (800)-424-9300

1 referring to: Ibandronate

SECTION 2: Hazards identification

Classification of the substance or mixture / Label elements

GHS Classification: no classification and labelling according to GHS

Other hazards

Note: - no information available

SECTION 3: Composition/information on ingredients

Characterization	Ibandronate with other inactive ingredients	
Ingredients	**Concentration**	**GHS-Classification (pure ingredient)**
Ibandronate 138926-19-9	0.1 %	- Combustible dust (No category), USH003 - Acute toxicity (Category 4), H302 - Skin corrosion/irritation (Category 1B), H314 - Specific target organ toxicity - Repeated exposure (Category 2), H373

For the full text of the H-phrases mentioned in this Section, see Section 16.

***1** referring to: Ibandronate

SECTION 4: First aid measures

4.1. Description of first aid measures

Eye contact	- rinse immediately with tap water for 10 minutes - open eyelids forcibly
Skin contact	- drench affected skin with water
Inhalation	- in the event of symptoms get medical treatment

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

Note	- no information available

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

Note to physician	- treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	- adapt extinguishing media to surrounding fire conditions
Flash point (liquid)	not applicable

5.2. Special hazards arising from the substance or mixture

Specific hazards	- no particular hazards known

5.3. Advice for firefighters

Protection of fire-fighters	-	precipitate gases/vapours/mists with water spray

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	-	no special precautions required

6.2. Environmental precautions

Environmental protection	-	no special environmental precautions required

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	-	mop or flush the contaminated area with water

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Suitable materials	-	glass

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	-	below 30 °C
Validity	-	after opening the content should be used within a short period, see expiry date on the label
Packaging materials	-	prefilled syringes

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Threshold value (Roche) air	-	IOEL (Internal Occupational Exposure Limit): 0.002 mg/m3	*1

8.2. Exposure controls

Respiratory protection	- Respiratory protection is recommended as a precaution to minimize exposure. Effective engineering controls are considered to be the primary means to control worker exposure. Respiratory protection should not substitute for feasible engineering controls. - respiratory protection not necessary during normal operations - in case of intense formation of aerosols: respirator with independent air supply or particle respectively filter mask (depending on the aerosol composition)
Hand protection	- protective gloves (eg made of neoprene, nitrile or butyl rubber)
Eye protection	- safety glasses

1 referring to: Ibandronate

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Color	colorless
Form	clear solution sterile liquid
Density	1.004 g/ml
pH value	3.9 to 4.1

9.2. Other information

Note	- no information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Note	- no information available

10.2. Chemical stability

Stability	- does not contain any antimicrobial preservative; therefore, care must be taken to ensure the sterility of the prepared solution

10.3. Possibility of hazardous reactions

Note	- no information available

10.4. Conditions to avoid

Conditions to avoid	-	temperatures above 30 °C

10.5. Incompatible materials

Note	-	no information available

10.6. Hazardous decomposition products

Note	-	Calcium containing solutions should not be mixed with Bondronat concentrate for solution for infusion

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	-	LD_{50}	811	mg/kg	(oral, rat)	*1
	-	LD_{50}	30	mg/kg	(i.v., rat)	*1
Local effects	-	skin, eyes, mucous membranes: corrosive				*1
Sensitization	-	non-sensitizing (guinea pig)				*1
Mutagenicity	-	not mutagenic (various in vivo and in vitro test systems)				*1
Carcinogenicity	-	not carcinogenic (several species)				*1
Reproductive toxicity	-	not teratogenic, not embryotoxic (several species)				*1
	-	does not lower parental fertility (several species)				*1
Note	-	inhibits mechanisms reducing bone mass by long-term binding to bone tissue				*1
	-	high doses cause: liver damages, kidney damages				*1
	-	decrease in serum calcium level possible				***1**
	-	dosage (oral): 2.5 to 50 mg/d				*1
	-	dosage (i.v.): 0.5 mg/3 months to 2.5 mg/day				*1
Potential Health Effects	-	Exposure: Inhalation, Ingestion, Skin contact, Eye contact				
	-	Carcinogenicity: formulation not listed by NTP, IARC or OSHA				
Additional Health Information	-	Conditions Aggravated: Hypersensitivity to this material and other materials in its chemical class. Uncorrected hypocalcemia. Severe renal impairment.				

1 referring to: Ibandronate

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

- strongly toxic for algae (Selenastrum capricornutum)
  EbC_{50} (72 h) 1.4 mg/l
  ErC_{50} (72 h) 4.7 mg/l
  NOEC (72 h) 0.22 mg/l
  (OECD No. 201) *1
- highly toxic for algae (Scenedesmus (=Desmodesmus) subspicatus)
  EbC_{50} (72 h) 0.218 mg/l (nominal concentration)
  ErC_{50} (72 h) 0.390 mg/l (nominal concentration)
  NOEC (72 h) < 0.1 mg/l (nominal concentration)
  (OECD No. 201) *1
- barely toxic for planktonic crustaceans (Daphnia magna)
  NOEC (48 h) 100 mg/l
  EC_{50} (48 h) > 180 mg/l
  (OECD No. 202) *1
- no adverse influence on substrate biodegradation (activated sludge)
  concentration (28 d) 41.5 mg/l
  (OECD No. 301B, Modified Sturm Test) *1
- barely inhibitory on aerobic bacterial reproduction (activated sludge)
  NOEC (5 h) 1300 mg/l
  (growth test) *1
- barely toxic for fish (carp)
  LC_{50} (96 h) 200 mg/l
  LC_0 (96 h) 86 mg/l
  (OECD No. 203) *1
- highly toxic for algae (Scenedesmus (=Desmodesmus) subspicatus)
  EC_{50} (14 d) 0.5 mg/l (nominal concentration)
  NOEC (14 d) 0.1 mg/l (nominal concentration)
  (OECD No. 201) *1
- no adverse influence on substrate biodegradation
  concentration (28 d) 100 mg/l
  (Manometric Respirometry Test, OECD No. 301 F) *1

12.2. Persistence and degradability

Ready biodegradability

- not readily biodegradable
  ≤ 3 %, 28 d
  (CO_2 Evolution Test, Modified Sturm Test, OECD No. 301B) *1
- not readily biodegradable
  0 %, 28 d
  (Manometric Respirometry Test, OECD No. 301 F) *1

Inherent biodegradability

- not inherently biodegradable
  < 10 %, 1 d
  < 10 %, 15 d
  < 10 %, 28 d
  (Zahn-Wellens test, OECD No. 302 B) *1
- not inherently biodegradable
  < 10 %, 28 d
  (Zahn-Wellens test, OECD No. 302 B) *1

Abiotic degradation	-	stable in water, no photodegradation 200 mg/l, water < 2 %, 14 d, ~ 22 °C, under illumination *1

12.3. Bioaccumulative potential

Note	-	no information available

12.4. Mobility in soil

Note	-	no information available
Mobility	-	no significant adsorption (, 28 d, ~22 °C) K_d = 1210 l/kg (activated sludge) (Adsorption to activated sludge in biodegradability test) *1

12.5. Results of PBT and vPvB assessment

Note	-	no information available

12.6. Other adverse effects

Note	-	no information available
Note	-	after the regular 28 days in the Zahn-Wellens test, without significant degradation and still 400 mg DOC/l, 200 mg DOC/l benzoate was added as a well degradable substrate; after 5 days, only 150 mg DOC/l was left, showing some cometabolic degradation *1
	-	biphosphonates form complexes with bivalent cations, in the relatively high concentrations in the algal test they deplete the medium as scavengers; hence, the effect on algae is not toxic in the strict sense *1

1 referring to: Ibandronate

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues	-	observe local/national regulations regarding waste disposal

SECTION 14: Transport information

Note	-	not classified by transport regulations, proper shipping name non-regulated

SECTION 15: Regulatory information

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

TSCA Status	- FDA Exemption - not on inventory
Reporting Requirements	- The United States Environmental Protection Agency (USEPA) has not established a Reportable Quantity (RQ) for releases of this material. - In New Jersey, report all releases which are likely to endanger the public health, harm the environment or cause a complaint to the NJDEPE Hotline (1-609-292-5560) and to local officials. - State and local regulations vary and may impose additional reporting requirements.

SECTION 16: Other information

Full text of H-Statements referred to under section 3

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
USH003	May form combustible dust concentrations in the air

Note	- Please note this Safety Data Sheet for the bulk product does not apply for the finished, packaged medicinal product intended for the final user.
Edition documentation	- changes from previous version in sections 2, 3, 7, 16

The information in this safety data sheet is based on current scientific knowledge. It should not be taken as expressing or implying any warranty concerning product characteristics.