

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017**SECTION 1. IDENTIFICATION**

Product name : BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)
Product code : RO200-5450/F03
Common name(s), syno- : Ibandronat 0,1125 % aqueous solution with excipients
nym(s) of the substance

Manufacturer or supplier's details

Company name of supplier : Genentech, Inc.
Address : DNA Way 1
94080 South San Francisco
CA
USA
Telephone : 001-(650) 225-1000
E-mail address : info.sds@roche.com
Emergency telephone : US Chemtrec phone (800)-424-9300
Emergency telephone num- : ber

Recommended use of the chemical and restrictions on use

Recommended use : Formulated pharmaceutical active substance
Restrictions on use : For professional users only.

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Ibandronate	138926-19-9	0.1125
Sodium chloride (NaCl)	7647-14-5	0.86
Sodium acetate trihydrate	6131-90-4	0.02
Water	7732-18-5	> 99.0

SECTION 4. FIRST AID MEASURES

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

Version
1.1

Revision Date:
03-03-2020

Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

- General advice : Do not leave the victim unattended.
- If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Rinse mouth with water.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during fire fighting : No information available.
- Hazardous combustion products : No hazardous combustion products are known
- Further information : Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Local authorities should be advised if significant spillages cannot be contained.

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

Version 1.1 Revision Date: 03-03-2020 Date of last issue: 06-09-2017
 Date of first issue: 06-09-2017

Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
 Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : For personal protection see section 8.
 Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions : See label, package insert or internal guidelines

Materials to avoid : No materials to be especially mentioned.
 Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Storage temperature : Protected from heat and light

Further information on storage stability : No decomposition if stored and applied as directed.

Packaging material : Suitable material: Stainless steel, glass, Vials, Prefilled syringes

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ibandronate	138926-19-9	IOEL	0.002 mg/m3	Roche Industrial Hygiene Committee (RIHC)

Engineering measures : No data available

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : Protective gloves

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

Remarks	:	Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.
Eye protection	:	Safety glasses
Skin and body protection	:	Protective suit
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Aqueous solution, Clear liquid, sterile
Color	:	colorless
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	3.8 - 4.4
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Evaporation rate	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	ca. 1 g/cm ³
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

Viscosity
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.
Incompatible materials : No data available
Hazardous decomposition products : No data available

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Not classified based on available information.

Components:**Ibandronate:**

Acute oral toxicity : LD50 Oral (Rat): 811 mg/kg

Sodium chloride (NaCl):Acute oral toxicity : LD50 Oral (Rat): 3,000 mg/kg
LD50 Oral (Mouse): 4,000 mg/kgAcute inhalation toxicity : Acute toxicity estimate: > 30 mg/l
Test atmosphere: dust/mist
Method: Expert judgment

Acute dermal toxicity : LD50 Dermal (Rabbit): > 10,000 mg/kg

Sodium acetate trihydrate:Acute oral toxicity : LD50 (Rat): 3,530 mg/kg
LD50 (Mouse): 4,960 mg/kgAcute inhalation toxicity : LC50 (Rat): > 30 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

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

Version
1.1

Revision Date:
03-03-2020

Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

Skin corrosion/irritation

Not classified based on available information.

Components:

Ibandronate:

Result : Causes burns.
Remarks : Extremely corrosive and destructive to tissue.

Sodium chloride (NaCl):

Remarks : This information is not available.

Sodium acetate trihydrate:

Remarks : This information is not available.

Serious eye damage/eye irritation

Not classified based on available information.

Components:

Ibandronate:

Remarks : May cause irreversible eye damage.

Sodium chloride (NaCl):

Remarks : This information is not available.

Sodium acetate trihydrate:

Remarks : This information is not available.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Components:

Ibandronate:

Species : Guinea pig
Result : Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Not classified based on available information.

Components:

Ibandronate:

Genotoxicity in vitro : Test Type: in vitro test
Result: negative

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

Genotoxicity in vivo : Test Type: in vivo assay
Species: laboratory animal
Result: negative

Carcinogenicity

Not classified based on available information.

Components:**Ibandronate:**

Species : laboratory animal
Result : negative

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:**Ibandronate:**

Effects on fertility : Species: laboratory animal
Result: Animal testing did not show any effects on fertility.

Effects on fetal development : Species: laboratory animal
Result: No teratogenic effects., No embryotoxic effects.

STOT-single exposure

Not classified based on available information.

Components:**Sodium acetate trihydrate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

Not classified based on available information.

Components:**Ibandronate:**

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

Sodium acetate trihydrate:

Assessment : The substance or mixture is not classified as specific target

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

organ toxicant, repeated exposure.

Repeated dose toxicity**Components:****Ibandronate:**

Species : laboratory animal
 NOAEL : 0,15 mg/kg/w
 Application Route : i.v.
 Exposure time : 26 Weeks
 Symptoms : kidney toxicity
 Remarks : Chronic toxicity

Aspiration toxicity

Not classified based on available information.

Components:**Ibandronate:**

No data available

Sodium acetate trihydrate:

No data available

SECTION 12. ECOLOGICAL INFORMATION**Components:****Ibandronate:**

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 200 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 GLP: yes

LC0 (Cyprinus carpio (Carp)): 86 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 GLP: yes

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 180 mg/l
 aquatic invertebrates : Exposure time: 48 h
 Method: OECD Test Guideline 202
 GLP: yes

NOEC (Daphnia magna (Water flea)): 100 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202
 GLP: yes

Toxicity to algae : ErC50 (Desmodesmus subspicatus (green algae)): 0.390 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201

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

 Version
 1.1

 Revision Date:
 03-03-2020

 Date of last issue: 06-09-2017
 Date of first issue: 06-09-2017

 GLP: no
 Remarks: nominal concentration

 EyC50 (Desmodesmus subspicatus (green algae)): 0.218 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 GLP: no
 Remarks: nominal concentration

 NOEC (Desmodesmus subspicatus (green algae)): 0.1 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 GLP: no
 Remarks: nominal concentration

 ErC50 (Selenastrum capricornutum (green algae)): 4.7 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 GLP: yes

 EyC50 (Selenastrum capricornutum (green algae)): 1.4 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 GLP: yes

 NOEC (Selenastrum capricornutum (green algae)): 0.22 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 GLP: yes

 Toxicity to microorganisms : (activated sludge): 41.5 mg/l
 Exposure time: 28 d
 Test Type: aerobic
 Method: OECD Test Guideline 301B
 GLP: yes
 Remarks: no adverse influence on substrate biodegradation

 NOEC (activated sludge): 1,300 mg/l
 Exposure time: 5 h
 Test Type: Growth inhibition
 GLP: no
 Remarks: Barely inhibitory on aerobic bacterial reproduction (activated sludge)

Sodium chloride (NaCl):

 Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 7,650 mg/l
 Exposure time: 96 h

 Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,000 mg/l
 Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

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

Version	Revision Date:	Date of last issue: 06-09-2017
1.1	03-03-2020	Date of first issue: 06-09-2017

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

Sodium acetate trihydrate:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 5,000 mg/l
Exposure time: 24 h

LC50 (Leuciscus idus (Golden orfe)): > 1,000 mg/l
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h

Toxicity to microorganisms : EC50 (Pseudomonas putida): 7,200 mg/l
Exposure time: 18 h

EC50 (Photobacterium phosphoreum): 22,500 mg/l
Exposure time: 0.25 h

Ecotoxicology Assessment

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:****Ibandronate:**

Biodegradability : Concentration: 41.5 mg/l
Result: Not readily biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

Concentration: 1,000 mg/l
Result: Not inherently biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 302B
GLP: no

Sodium chloride (NaCl):

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Sodium acetate trihydrate:

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017Biodegradability : Biodegradation: 99 %
Exposure time: 28 d**Bioaccumulative potential****Components:****Ibandronate:**Partition coefficient: n- : Remarks: No data available
octanol/water**Sodium chloride (NaCl):**Partition coefficient: n- : Remarks: No data available
octanol/water**Sodium acetate trihydrate:**Partition coefficient: n- : log Pow: -4.22
octanol/water**Water:**Partition coefficient: n- : Remarks: No data available
octanol/water**Mobility in soil**

No data available

Other adverse effects**Product:**Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Can be disposed as waste water, when in compliance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulations**

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

Version
1.1

Revision Date:
03-03-2020

Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Domestic regulation

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
------------	---------	---------------------

SARA 311/312 Hazards : No SARA Hazards

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Pennsylvania Right To Know

Water

7732-18-5

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

Version
1.1

Revision Date:
03-03-2020

Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

Maine Chemicals of High Concern

Vermont Chemicals of High Concern

Washington Chemicals of High Concern

The ingredients of this product are reported in the following inventories:

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

Ibandronate

AICS : Not in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

TCSI : Not in compliance with the inventory

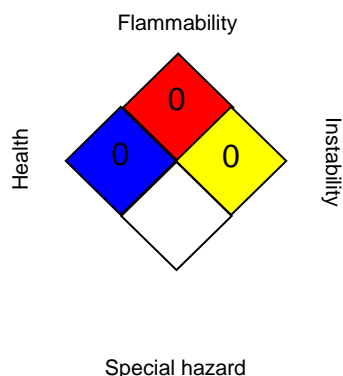
TSCA : Substance(s) not listed on TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

BONIVA(R) Injection (3 mg/3 ml pre-filled syringes)Version
1.1Revision Date:
03-03-2020Date of last issue: 06-09-2017
Date of first issue: 06-09-2017**NFPA:****HMIS® IV:**

HEALTH	/	0
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 03-03-2020

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

Version
1.1

Revision Date:
03-03-2020

Date of last issue: 06-09-2017
Date of first issue: 06-09-2017

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8 / 1810